

March & May  
1885

GENERAL ORDERS, } HEADQUARTERS OF THE ARMY,  
No. 11. } ADJUTANT GENERAL'S OFFICE,  
Washington, February 7, 1885.

I..The 3d Regiment of Cavalry (except the troop stationed at Fort Leavenworth, Kansas) and the 10th Regiment of Cavalry will exchange stations, the movement to commence not later than April 1, 1885. The exchange will be made by marching.

II..The commanding generals Divisions of the Pacific and the Missouri will assign the respective regiments coming to their commands' to stations as soon as practicable after the receipt of this order.

III..The columns during the movement will be provided with necessary supplies at convenient stations on the contiguous railroads.

IV..As far as practicable, all regimental, troop, and the authorized allowance of officers' baggage will be shipped by rail from initial points to the new stations of the different detachments of each regiment.

V..Further details will be arranged by the commanding generals Divisions of the Missouri and the Pacific, due regard being paid to economy by requiring, as far as practicable, the simultaneous arrival of columns at such points as they may designate for the exchange of wagon transportation.

BY COMMAND OF LIEUTENANT GENERAL SHERIDAN:

R. C. DRUM,  
Adjutant General.

OFFICIAL:

Assistant Adjutant General.

Form No. 202

War Department, Signal Service, U. S. Army.

(TELEGRAM.)

NUMBER.	SENT BY	REC'D BY	CHECK.
	<i>Jul</i>	<i>5</i>	<i>330B</i>

Received at *Verde* *2/27/85*, 188.

Dated *Whipple Bldg* *2/27/85*

To *Dr Means*  
*Fort Verde Ariz*

*Do you desire to accompany the*  
*Third Cavalry in its march from*  
*this Department. If so let me know*  
*before I recommend officers for the*  
*detail*

*Irwin*  
*Med Dir*



HEADQUARTERS DEPARTMENT OF ARIZONA,  
WHIPPLE BARRACKS, PRESCOTT, *March 11, 1885.*  
SPECIAL ORDERS 1  
No. 25. 1

( *Extract.* )

1. In compliance with Division General Orders No. 4, current series, the 3d Cavalry, except as therein prescribed, will march to Bowie Station, A. T., leaving their present stations in time to reach that point not later than the 13th proximo, and thence to Deming, N. M., as directed by said order. The troops at Forts Apache, San Carlos, Thomas and Grant will unite, in the order of posts named.

Regimental, troop and officers' baggage will be shipped as directed in paragraph 43 General Orders No. 11, current series, Headquarters of the Army. Supplies will be furnished from this Department to Deming, and for the 10th Cavalry, from that point to stations as assigned.

The Chiefs of the Quartermaster's and Subsistence Departments will provide necessary supplies for the troops at convenient points contiguous to the line of march between the posts in this Department and Deming, N. M. Posts will supply transportation as follows, to be assigned to service by the Chief Quartermaster:

Whipple Depôt.—4 six-mule teams.—1 ambulance.  
Fort Verde.—1 six-mule team.  
Fort Apache.—2 six-mule teams.—1 ambulance.  
Fort Thomas.—4 six-mule teams.—1 ambulance.  
San Carlos.—1 six-mule team.  
Fort Grant.—7 six-mule teams. 1 ambulance.  
Fort Bowie.—2 six-mule teams.  
Fort Huachuca.—3 six-mule teams.

2. Captain C. W. Williams, assistant quartermaster, will proceed to Bowie Station, prior to the arrival there of the 3d Cavalry, and thence to Deming, N. M., for the purpose, under instructions of the Chief Quartermaster and Commissary, of superintending the transportation and supply of the troops from and to their posts. Upon completion of these duties Captain Williams will rejoin his station.

The journeys as directed are necessary for the public service.

*Dr Mearns. 3*

3. The Quartermaster's Department will furnish the necessary wagon and rail transportation, via Ash Fork to Fort Davis, Texas, to the Colonel, Adjutant, non-commissioned staff and band of the 3d Cavalry.

4. Assistant Surgeon *E. A. Mearns*, U. S. Army, will report to Lieutenant Colonel *D. R. Clendenin*, 3d Cavalry, to accompany the regiment as medical officer in charge, and will return with the 10th Cavalry, to his station - Fort Verde.

Acting Assistant Surgeon *G. E. Andrews*, U. S. Army, will report to the Commanding Officer Fort Thomas, to accompany the troops from Forts Apache, Thomas and Grant to Bowie Station, thence with the regiment to Denning and return with the troops of the 10th Cavalry assigned to Forts Grant, Thomas and Apache, from which last named point he will rejoin his station - Fort Huachuca.

The journeys of Acting Assistant Surgeon *Andrews* as directed are necessary for the public service.

Acting Assistant Surgeon *S. F. Weirick*, U. S. Army, will accompany Troop A, 3d Cavalry, upon its departure from Fort Apache to Fort Thomas, reporting upon arrival to the commanding officer for temporary duty at that post.

The Quartermaster's Department will furnish the necessary transportation.

5. Private *C. W. Hausaker*, Troop C, 3d Cavalry (hospital steward of the 3d class), on being relieved at Fort Lowell, will proceed to Fort Thomas and report to the commanding officer for duty in the same capacity with troops of his regiment under orders to proceed to Texas.

Private *Peter Werner*, Company E, 1st Infantry (hospital steward of the 3d class), will accompany the 3d Cavalry in that capacity to Denning, N. M., and return with the 10th Cavalry to his station - Whipple Barracks.

The Quartermaster's Department will furnish the necessary transportation.

BY ORDER OF BRIGADIER GENERAL CROOK:

*W. B. B. B.*  
Assistant Adjutant General.

A Journal of a Journey from Fort Verde,  
To Denning, New Mexico;  
Arizona, and Returning, Performed on  
Horseback: Distance about 912 miles,  
Leaving Fort Verde on March 25<sup>th</sup>, 1885,  
and returning May 20<sup>th</sup>, 1885.

By Edgar A. Mearns,  
1<sup>st</sup> Lieut. and Asst Surgeon, U. S. A.,  
Medical Officer in Charge of the 3<sup>rd</sup> and 10<sup>th</sup>  
Regiments of U. S. Cavalry exchanging Stations  
between the Departments of Arizona and Texas.



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4 15	Sex and Age	Date	Locality	Remarks	Wing	Tail	Culmen and cere	Cere	Culmen	Bill from nostril	Gape	Tarsus	Middle toe with claw	Circum. about	
3871	♂ ad.	April 2	<i>Polioptila melanura</i> Near Guasa Grande, A.T.	Outer web of outer tail	112	150	48	53	-	-	10	6	12.5	18	12 3.4
3872	♀ ad.	" 2	<i>Polioptila melanura</i> Near Guasa Grande, A.T.	do do	107	140	47	53	-	-	10	7	12	17	12 3.5
3873	♂ ad.	" 3	<i>Colaptes chrysoides</i> Near Picacho Station, A.T.	Irises, reddish-brown. Bill Tarsi and feet, plumbeous	294	470	148	109	-	-	37	29	40	29.5	33 11.5
3874	♂ ad.	" 3	<i>Centurus uropygialis</i> Near Picacho Station, A.T.		254	442	133	92	-	-	32	25	36	24	29 10.5
3875	♂ ad.	" 3	<i>Minimus polyglottus</i> Near Red Rock, A.T.		265	366	118	130	-	-	20	14	25	33	30 9
3876	♂ ad.	" 3	<i>Passerculus innominatus</i> Red Rock, A.T.		144	235	74	56	-	-	11	8	13	19	20 5.5
3877	♀ ad.	" 3	<i>Harporhynchus curvirostris palmeri</i> Red Rock, A.T.	Parent of Set No.	280	348	108	121	-	-	33.5	25	38	33.5	32 9
3878	♂ ad.	" 3	<i>Harporhynchus cinereus bairdii</i> Near Red Rock, A.T.	Parent of Set No.	270	348	112	124	-	-	25	19.5	31.5	34	33 9
3879	♂ juv.	" 3	<i>Harporhynchus curvirostris palmeri</i> do do	Irises, yellowish-white. Tarsus, dusky. Feet and claws, dusky.	213	300	85	65	-	-					
3880	♂ juv.	" 3	<i>Harporhynchus cinereus bairdii</i> do do	Young taken from nest.	166	255			-	-					
3881	♂ juv.	" 3	<i>Campylorhynchus brunneicapillus</i> Picacho Station, A.T.	Flaw from nest which and an added egg, preserved.					-	-					
3882	♂ juv.	" 3	<i>Colaptes chrysoides</i> do do		303	485	150	107	-	-	39	31	42	29	32 12
3883	♂ ad.	" 4	<i>Harporhynchus bairdii</i> Red Rock, A.T.	Parent of nest contained advanced measuring, 26x20;	260	330	101	122	-	-	26	19	30	33	31 8
3884	♀ ad.	" 4	<i>Pyrocephalus rubinus mexicanus</i> Near Picacho Station, A.T.		151	263	81	65	-	-	9.5	18	16	16	5.5
3885	♂ ad.	" 4	<i>Pyrocephalus rubinus mexicanus</i> Near Tucson, A.T.		114	143	47	54	-	-	9.5	6	12	18	12 3
3886	♀ ad.	" 4	<i>Polioptila melanura</i> Red Rock, A.T.		580	1350	410	260	40	16	28	-	47	89	64 24
3887	♂ juv.	" 5	<i>Buteo borealis calurus</i> Fort Lowell, A.T.	Stomach empty.	500	860	262	100	-	-	41	-	49	39	55 8
3888	♂ ad.	" 5	<i>Chaulelasmus streperus</i> Santa Rita River at Ft. Lowell.	Width of bill below nostrils Base of bill, 17. Irises, hazel. Bill dusky-olive; residue of mandible yellow. Tarsi and feet, olivaceous.	124	178	88	54	-	-	6	12	18	15	4
3889	♂ ad.	" 6	<i>Myiodytes pusillus pusillatus</i> Fort Lowell, A.T.		153	265	86	64	-	-	9	18	16	16	5.5
3890	♂ ad.	" 6	<i>Pyrocephalus rubinus mexicanus</i> Fort Lowell, A.T.	A mated pair, with	150	257	83	64	-	-	9.5	18	16	14	5
3891	♀ ad.	" 6	<i>do do do</i> do do do		115	178	57	45	-	-	7	11	17	14	4
3892	♂ ad.	" 6	<i>Helminthophaga cuculæ</i> Fort Lowell, A.T.		227	312	97	110	-	-	16.5	-	17	27	26 8
3893	♂ ad.	" 6	<i>White-throated vireo</i> Fort Lowell, A.T.		268	390	122	94	-	-	12.5	9	15	36	34 11
3894	♂ ad.	" 7	<i>Coccyzus erythrophthalmus</i> Near Mountain Spring, A.T.		372	400	123	95	-	-	12	9	15	34	35 9
3895	♂ ad.	" 7	<i>do do do</i> do do do		222	340	108	95	-	-	23	16	25	24	26 7
3896	♂ ad.	" 7	<i>Seturus parisorum</i> Near Fort Lowell, A.T.	Swinging an exquisite girdle on a hillside	268	392	123	92	-	-	12	9	15	33	34 9
3897	♀ ad.	" 7	<i>Calidris macularia</i> Near Mountain Spring, A.T.	A mated pair killed at sa eggs ready to be laid.	275	400	126	102	-	-	12	9	15	32	33 8.5
3898	♂ ad.	" 7	<i>do do do</i> do do do		262	380	120	90	-	-	12	9	16	32	34 9
3899	♀ ad.	" 7	<i>do do do</i> do do do		303	490	150	110	-	-	35	-	40	30	33 12
3900	♂ ad.	" 7	<i>Colaptes chrysoides</i> Near Fort Lowell, A.T.	Shot from a giant cactus containing one egg was Parent of nest of five old.	115	152	47	52	-	-	10	6	12	17	12 3.5
3901	♂ ad.	" 7	<i>Polioptila melanura</i> Near Fort Lowell, A.T.		280	360	112	101	-	-	11	8	14	30	34 10
3902	♀ ad.	" 7	<i>Lophortyx gambeli</i> Near Fort Lowell, A.T.	Parent of suite of 11 eggs. Shot nest.	281	544	175	101	-	-	28	24	35	27	26 10
3903	♀ ad.	" 8	<i>Agelaius phoeniceus</i> Near Mountain Spring, A.T.	Breeding in cottonwoods	146	262	80	61	-	-	14	10	18	17.5	15 4.5
3904	"	" 8	<i>Pyrocephalus rubinus mexicanus</i> Near San Pedro River, A.T.		112	180	57	44	-	-	9.5	7	10	17	13 3.5
3905	"	" 8	<i>Helminthophaga cuculæ</i> Tres Alamos on San Pedro River												



No.	Sex and Age	Date	Locality and Name.	Remarks
3906	♂ ad.	Apr. 9	Caliche, Squamata, San Pedro River, A.T.	
3907	♂ ad.	" 9	do do do	
3908	♂ ad.	" 9	do do do	
3909	♂ ad.	" 9	do do do	
3910	♂ ad.	" 9	Spokane, Camanche, by highway.	Stomach contained 3 small birds, hazel. Bill, and claws, black.
3911	♂ ad.	" 11	Point of Mountain, A. T. <i>Cornus cryptoleuca</i>	
3912	♂ ad.	" 11	Railroad Pass, A. T. <i>Cornus cryptoleuca</i>	
3913	♂ ad.	" 11	Bonita Station, A. T. <i>Pucara cassini</i>	Do do. Singing very sweetly. Song a trifle like a sparrow. Bill dark brown, and below. Tarsus, flesh color. Feet brown.
3914	♂ ad.	" 14	Railroad Pass, A. T. <i>Oroscoptes montanus</i>	
3915	♂ ad.	" 14	Stem's Pass, New Mexico. <i>Icterus parisorum</i>	
3916	♂ ad.	" 14	San Simon Valley, Arizona. <i>Spizella breweri</i>	
3917	♂ ad.	" 14	San Simon Valley, Arizona. <i>Spizella breweri</i>	
3918	♂ ad.	" 15	Stem's Pass, New Mexico. <i>Cornus cryptoleuca</i>	Graduation of tail, 34.
3919	♂ ad.	" 15	Alkali Flat, near Pyramid, N. M. <i>Oroscoptes montanus</i>	
3920	♂ ad.	" 15	Gordsburg, New Mexico. <i>Amphispiza bilineata</i>	
3921	♂ ad.	" 15	Gordsburg, New Mexico	A mated pair killed at same shot.
3922	♂ ad.	" 15	do do do	
3923	♂ ad.	" 16	Calamopiza melanocorys.	
3924	♂ ad.	" 16	Sejar, New Mexico. <i>Cornus cryptoleuca</i>	Graduation of tail, 31.
3925	♂ ad.	" 17	Sejar, New Mexico. <i>Centropus ornatus</i>	Irides, hazel. Bill, 2/3 of mandible; residue Tarsi and feet, brown.
3926	♂ ad.	" 17	Sejar, New Mexico	
3927	♂ ad.	" 17	Near Sejar, New Mexico	
3928	♂ ad.	" 17	do do do	
3929	♂ ad.	" 17	Coturniculus passerinus, arizonae	
3930	♂ ad.	" 17	Near Sejar, New Mexico.	
3931	♂ ad.	" 17	do do do	
3932	♂ ad.	" 17	Spizella pallida.	Shot in a wide grassy prairie.
3933	♂ ad.	" 17	Sejar, New Mexico. <i>Calamopiza melanocorys</i>	
3934	♂ ad.	" 18	Sejar, New Mexico. <i>Lanius ludovicianus excubitorides</i>	
3935	♂ ad.	" 18	Deming, New Mexico. <i>Sceloporus cyanocephalus</i>	
3936	♂ ad.	" 18	New Deming, New Mexico. <i>Pucara cassini</i>	
3937	♂ ad.	" 18	New Deming, New Mexico. <i>Minimus polyglottus</i>	
3938	♂ ad.	" 20	Deming, New Mexico. <i>Harporhynchus crissalis</i>	
3939	♂ ad.	" 20	do do do	
3940	♂ ad.	" 20	Deming, New Mexico. <i>Myiozetetes similis piliolatus</i>	

anku.	Length	Wing	Tail	Culmen and cere	Cere	Culmen	Nostril	Gape	Maxilla	Tarsus	Middle toe & claw	Claw
	280	400	121	98	—	12	9	16	—	33	36	8
	271	388	120	95	—	12	9	16	—	32	34.5	8.5
	285	395	119	98	—	12.5	9	16	—	35	35	9.5
	276	400	127	99	—	13	9	16	—	34	35	8
Wizards.	240	635	178	84	18	5	14	22	4	47	28	11
(Lasi, Lect. graduation of tail, 45)	535	1085	365	225	—	58	38	60	—	60	56	17
" do " 38	510	1000	335	210	—	48	34	58	—	64	56	15
like <i>Stamella melanota</i>	159	218	68	73	—	12	7.5	12.5	—	19	18	4
(See note last entry. we. light brown.)	222	313	98	95	—	20	13	26	—	31	25	6
	215	333	111	96	—	24	16	24	—	26	26	8
	140	200	64	65	—	9	—	9.5	—	17	16	4
	270	423	130	87	—	34	23	36	—	40	34	8
	577	1080	360	225	—	54	37	58	—	60	56	16
	166	302	98	67	—	13	10	18	—	22	17	6
	320	310	97	94	—	19	12	26	—	33	27	8
	143	213	66	68	—	12	—	12	—	19	17	4
same shot.	138	210	66	64	—	12	—	12	—	18	16	4.5
	185	294	93	74	—	14.5	—	16	—	26	24	7
	512	1065	355	230	—	50	36	57	—	58	55	16
blue on basal	153	275	86	63	—	12	13	10.5	Hand claw	21	19	10.5
blue-black	160	285	91	68	—	11	12	10	Hand claw	21	19	10
ish-black.	148	265	83	60	—	10	11	9	Hand claw	21	18	9
	142	260	81	60	—	10	—	12	Hand claw	20	18	5
	131	214	68	50	7	12	—	13	Hand claw	20	18	4.5
	135	217	68	50	7	12.5	—	13	Hand claw	21	18	4.3
	137	200	62	62	—	9.5	—	10	Hand claw	19	17	4.3
	180	925	89	72	—	14.5	—	15	Hand claw	26	23	6
	241	335	105	113	—	17	12	25	—	28	24	7.5
	259	415	134	112	—	20	—	22	—	24	29	8
	161	212	69	75	—	12	—	13	—	19	19	4.5
	251	353	111	120	—	20	12	25	—	34	30	8
	313	322	101	107	—	39	31	43	—	34	30	8
	294	333	105	106	—	39	31	42	—	35	30	7.5
	228	328	102	105	—	22	17	29	—	24	19	6.5
	128	169	57	54	—	10	6	14	—	19	18.5	4

No.	Sex and Age	Date	Locality	Remarks	Length	Tarsus	Wing	Tail	Culmen and Cere	Cere	Culmen	Bill from Nostril	Lafe	Base of Tarsus	Tarsus	Middle toe & claw	Claw alone
3941	♀ ad.	Apr. 20	San Juan, New Mexico.		190	253	80	92	—	—	14	—	15	12	24	25	9
3942	♂ ad.	" 20	San Juan, New Mexico.		144	200	65	67	—	—	10	—	10.5	—	19	17	5
3943	♂ ad.	" 20	San Juan, New Mexico.		141	211	66	64	—	—	10	—	11	—	19	16	4.5
3944	♂ ad.	" 20	San Juan, New Mexico.		137	190	63	65	—	—	9	—	10	—	17	16	4.5
3945	♂ ad.	" 20	San Juan, New Mexico.		140	201	65	67	—	—	10	—	10.5	—	20	18	5
3946	♀ ad.	" 22	San Juan, New Mexico.		155	270	84	70	—	—	12	—	13	—	22	20	6
3947	♂ ad.	" 22	San Juan, New Mexico.		263	358	116	129	—	—	19	13	26	—	32	29	7.5
3948	♂ ad.	" 22	San Juan, New Mexico.		305	333	102	137	—	—	37	30	41	—	35	30	8
3949	♀ ad.	" 24	San Juan, New Mexico.		154	200	64	73	—	—	12.5	—	13	—	20	19	5
3950	♀ ad.	" 28	Stein's Pass, New Mexico.		175	207	67	70	—	—	10	—	11.5	—	19	16	4
3951	♀ ad.	" 28	Stein's Pass, New Mexico.		295	450	150	138	—	—	13	9.5	20	—	21	27	7
3952	♂ ad.	" 28	Stein's Pass, New Mexico.	Shot on the top of a stack, where it was young with parents.	270	400	126	98	—	—	13	9	16	—	36	34	8.5
3953	♂ juv.	" 28	Stein's Pass, New Mexico.	Young with parents.	147	227											
3954	♂ juv.	" 28	Stein's Pass, New Mexico.	Young with parents.	146	225											
3955	♂ ad.	" 29	San Simon, A. T.	A mated pair marshy ditch, where breeding, or going to lay on top of	254	575	158	100	—	—	20	—	22	15	35	25	5.5
3956	♂ ad.	" 29	San Simon, Arizona Terr.		260	507	160	105	—	—	21	—	22.5	17	36	26	5.5
3957	♂ ad.	" 29	San Simon, A. T.		177	322	106	76	—	—	13	10	17.5	—	21	17	6
3958	♂ ad.	" 30	Bowie Station, A. T.		275	367	118	104	—	—	12	8	12.5	—	32	35	8
3959	♂ ad.	" 30	Chiricahua Mts., A. T., near Bowie Station.	Parent of nest	278	326	100	150	—	—	35	25	40	—	34	31	8
3960	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	Parent of Set No 3 (see 3959)	215	288	90	89	—	—	23	15	27	—	28	27	7
3961	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	Destroyed. A dog ate the skin.	213	323	103	99	—	—	15	15	27	—	24	19	7
3962	♀ ad.	" 30	Chiricahua Mts., near Bowie Station.	Breeding in a soapwood.	208	300	93	83	—	—	22	—	22	—	25	25	7.5
3963	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.		126	195	62	55	—	—	8	12.5	—	—	17	15	4.5
3964	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	Not skinned.	145	196	62	52	—	—	—	13.5	—	—	22	17	5
3965	♂ ad.	" 30	Bowie Station, Arizona.	Destroyed. A dog ate the skin.	127	185	60	57	—	—	6	11.5	—	—	18	14	4
3966	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.		106	140	46	51	—	—	10	6	12	—	17	11	3.5
3967	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.		127	185	60	57	—	—	—	6	11.5	—	18	14	4
3968	♂ ad.	" 30	Bowie Station, Arizona.		145	196	62	59	—	—	—	9	13.5	—	22	17	5
3969	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.		150	219	68	71	—	—	12	—	12	—	20	18	5
3970	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	In a grassy place.	243	635	183	95	19	5.5	14	—	20	—	50	30	11
3971	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	Stomach contained several small lizards, & insects.	272	392	120	94	—	—	13	9	15	—	35	35	9
3972	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	new-black. Larks & dusky.	156	343	145	65	—	—	6	3	15	—	10	13	7
3973	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	Shot from a flock on the wing.	96	112	47	28	—	—	19	—	24	—	4	6	3
3974	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	Feeding upon a purple thistle.	197	305	100	84	—	—	21	15	23	—	19	21	6
3975	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	Feeding upon a purple thistle.	286	415	129	99	—	—	12.5	9	15.5	—	33	38	11
3976	♂ ad.	" 30	Chiricahua Mts., near Bowie Station.	Breeding.	280	400	126	97	—	—	18	10	16	—	34	37	9



[illegible]



No.	Sex and Age.	Date	Locality & Name.	Remarks.	Length	Alar expanse	Wing	Tail	Culmen and cere	Cere	Culmen	Bill from mandible	Gape	Basal tarsus	Tarsus	Middle toe	Claw
4010	♂ ad	May 11	Harporhynchus ruficollis, Arizona Between Casa Grande & Sweet Water, Ariz.	A mated pair taken with nest and eggs.	282	313	100	128	—	—	33	25	37	—	33	30	8
4011	♀ ad	" 11	do do do	Shot from nest.	274	311	95	120	—	—	33	25	37	—	32	29.5	8
4012	♀ ad	" 11	Coccyzus erythrophthalmus, Arizona Near Casa Grande, A. T.	Birds, eggs, etc. Bill, black; rest of plumage black. Tarsi and feet black.	181	312	102	74	—	—	18.5	13	25	—	15	16	5.5
4013	♂ ad	" 11	Melospiza cinerea, Arizona Near Casa Grande, A. T.	Covring on a mosquito a dry sheet.	310	520	174	127	—	—	22	14.5	26	—	26	34	8
4014	♂ ad	" 11	Spizella socialis, Arizona Casa Grande, A. T.	Birds, set pair - color. Bare skin Bill, black; rest of plumage black. Tarsi and feet black. Tarsi and feet black.	930	1030	267	100	8.90	—	85	69	102	68	118	78	7.5
4015	♂ ad	" 11	Polioptila melanura, Arizona Casa Grande, A. T.	Claws, dark plumbeous.	110	142	47	52	—	—	9.3	6	12	—	17	11.5	3.2
4016	♂ ad	" 11	Polioptila melanura, Arizona Sweet Water, A. T.		116	154	49	54	—	—	9.5	6	12	—	17	11	3
4017	♂ juv	" 12	Lanius ludovicianus excubitorides, Arizona Mazicopa, A. T.	Young of the year, accompanied by its parents.	—	—	—	—	—	—	—	—	—	—	—	—	—
4018	♂ ad	" 12	Melospiza cinerea, Arizona Mazicopa, A. T.		257	440	137	95	—	—	34	—	38	—	22	28	10
4019	♂ ad	" 12	Agelaius phoeniceus, Arizona Gila Indian Agency, on Gila River, A. T.		241	420	133	98	—	—	25	—	25	—	32	33	10
4020	♂ ad	" 13	Cardinalis virginianus igneus, Arizona Salt River at Phoenix, A. T.		245	320	102	124	—	—	20	14	20	—	28	26	8
4021	♂ ad	" 13	Melospiza cinerea, Arizona Gila Indian Agency on Gila River, A. T.		126	286	58	55	—	—	9	6	12	—	18.5	14	4.5
4022	♀ ad	" 13	Melospiza cinerea, Arizona Salt River at Phoenix, A. T.	Parent of Set No. 3	245	486	162	116	—	—	21	12	26	—	21	32	7
4023	♂ ad	" 13	Lanius ludovicianus excubitorides, Arizona Gila Indian Agency, A. T.	A mated pair breeding in giant cactus.	255	428	130	87	—	—	31	—	35	—	22	29	10
4024	♀ ad	" 13	do do do		237	418	128	87	—	—	27	—	31	—	21	26	9
4025	♂ ad	" 13	Agelaius phoeniceus, Arizona Phoenix, A. T.		258	438	135	94	—	—	31.5	—	36	—	22	29	10
4026	♀ ad	" 13	do do do	A mated pair breeding in giant cactus.	239	410	128	88	—	—	27	—	31	—	22	27	9
4027	♂ juv	" 14	Agelaius phoeniceus, Arizona Desert Station, A. T.	Young of the year with parents. Brides black tarsus.	275	460	—	—	—	—	—	—	—	—	—	—	—
4028	♂ ad	" 14	Cathartus mexicanus, Arizona Phoenix, A. T.	Bill, plumbeous; feet, black-gray.	175	275	88	67	—	—	13	8	15	—	16	19	5
4029	♂ ad	" 14	do do do	Birds, light red. Bare skin various red, shading color to the black tip. Tarsi and feet, black.	170	277	81	65	—	—	12	7	15	—	17	19	5
4030	♂ ad	" 14	do do do		172	285	93	68	—	—	12	7.5	15	—	16	19	5
4031	♂ ad	" 14	Harporhynchus ruficollis, Arizona Desert Station, A. T.		285	320	102	133	—	—	32	24	36	—	32	30	8.5
4032	♀ ad	" 14	do do do	A mated pair, probably breeding. Claws, plumbeous.	272	310	97	124	—	—	30	22	33	—	30	29	8
4033	♂ ad	" 14	Scardafella inca, Arizona Phoenix, Arizona.	Birds, orange-red.	213	290	95	102	—	—	17	8	15	—	16	21	5
4034	♂ ad	" 14	do do do	Bill, plumbeous; feet, black.	207	286	93	96	—	—	17	8.5	15.5	—	16.5	21	5.5
4035	♂ ad	" 14	do do do	Tarsi and feet, plumbeous.	211	295	97	104	—	—	17	9	15	—	17	20	5
4036	♂ ad	" 14	do do do		211	283	92	100	—	—	17	9	15	—	17	21	6
4037	♀ ad	" 14	do do do	Claws, dusky-plumbeous.	202	280	93	96	—	—	13	8	15	—	16	19.5	5
4038	♀ ad	" 14	do do do		197	286	94	96	—	—	13	8	15	—	16	20	5
4039	♂ ad	" 15	Melospiza cinerea, Arizona Desert Well, A. T.		312	505	175	130	—	—	22	14	27	—	26	33	8
4040	♂ ad	" 15	Polioptila melanura, Arizona Hall's Ranch, on Gila River, A. T.	Parent of Set No. 5	115	150	47	55	—	—	10	7.5	13	—	17	13	4
4041	♂ juv	" 15	Agelaius phoeniceus, Arizona Desert Station, A. T.	Young still with its parents.	—	—	—	—	—	—	—	—	—	—	—	—	—
4042	♂ juv	" 15	do do do		—	—	—	—	—	—	—	—	—	—	—	—	—
4043	♂ juv	" 15	Agelaius phoeniceus, Arizona Gila River, Arizona.		277	455	—	—	—	—	—	—	—	—	—	—	—
4044	♂ ad	" 15	Polioptila melanura, Arizona Desert Station, A. T.		228	310	98	110	—	—	17	—	47	—	28	28	9

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No.	Sex and Age	Date	Locality and Name.	Remarks.	Total Length	Head and Body	Eye	Ear	Mouth	Tip of Ear	Weight	Skull	Brain	Heart	Fore Leg	Mid Leg	Ear above Crown	Ear above Nostril	Distance between Eyes	Chest	Girth
168	♀ ad.	Mar. 23	Near Heiler's Ranch on the Rio Grande, A. T.	Mammals, 10. Belly girth, 16.5.	265	173	17	34	36	41	45	74	92	24	35	48	68	4	8	22	110.
169	♂ ad.	" 28	Between New River and Phoenix, Arizona.	Belly girth, 17.0	275	165	16	34	36	40	44	85	107	24	36	50	68	3	7	22	110.
170	♀ ad.	" 28	Between New River and Phoenix, Arizona.	Belly girth, 17.0	250	160	17	32	33	38	43	72	90	23	33	46	63	4	7	23	105.
171	♂ ad.	" 28	Between New River and Phoenix, Arizona.	Belly girth, 17.5	257	166	18	32	34	39	43	73	91	23	34	47	63	3	7	24	112.
172	♂ ad.	" 28	Between New River and Phoenix, Arizona.	Belly girth, 17.5	270	155	17	32	34	38	42	85	115	25	35	48	66	4	7.5	23	110.
173	♀ ad.	" 28	Desert Well, A. T., 20 miles from Phoenix.	Belly girth, 15.0.	252	147	17	34	36	44	45	80	105	23	38	46	69	5	10	24	100.
174	♀ ad.	" 30	Fort Yuma, Arizona.	Belly girth, 17.0.	257	160	15	30	31	37	41	77	97	24	34	49	64	3	7	22	105.
175	♀ ad.	Apr. 2	Peacho Station, A. T.	Belly girth, 4.15. Ear, breadth, 10.0.	190	55.2	65	45	—	3.15	128	55	88	73	140	215	265	200	—	52	325.
176	♂ ad.	" 9	Point of Mountain near Wilcox, A. T.		392	276	30	56	60	70	73	92	116	45	62	94	119	8	15	—	170.
177	♂ ad.	" 9	do do do		382	283	32	59	60	68	74	76	99	48	60	92	115	6	12	—	155.
178	♂ ad.	" 9	do do do		400	296	32	57	59	72	74	81	104	45	60	90	118	7	14	—	185.
179	♂ ad.	" 9	do do do		390	290	31	56	59	69	71	81	100	46	58	91	119	6	13	—	180.
180	♂ ad.	" 9	do do do		410	310	32	60	63	73	76	88	100	46	63	95	121	7	14	—	190.
181	♂ ad.	" 9	do do do		412	306	31	60	61	71	73	88	106	49	64	95	121	6	13	—	195.
182	♀ ad.	" 9	do do do		375	273	32	57	58	67	71	77	102	49	62	92	114	5	11.5	—	180.
183	♀ ad.	" 9	do do do		370	280	32	57	58	66	68	73	90	44	58	85	110	5	11	—	168.
184	♀ ad.	" 9	do do do		350	272	30	54	56	68	69	58	78	43	55	83	109	6	12.5	—	186.
185	♂ ad.	" 9	do do do		375	277	31	58	59	71	72	80	98	46	61	92	118	6	12	—	170.
186	♀ ad.	" 9	do do do		383	281	31	59	60	70	70	83	102	45	62	95	115	7	13	—	200.
187	♀ ad.	" 9	do do do		390	283	31	57	58	69	71	82	107	41	58	85	106	5	11	—	170.
188	♂ ad.	" 20	Lepus callosus texianus.	Ears, width, 75.	580	470	55	88	—	265	104	70	110	68	130	180	258	168	—	—	250.
189	♂ ad.	" 27	Lepus sylvaticus arizonae.	Ears, width, 38.	340	270	38	60	—	145	73	48	70	42	87	98	160	8.5	—	—	—
190	♂ ad.	May 3	Flagoon Summit, A. T.	Type of Cynomys arizonensis Mearns.	390	280	32	61	62	73	77	84	110	48	62	95	118	6	13	—	185.
191	♂ ad.	" 8	Lepus callosus callosus.	Ears, width, 95.	650	525	66	105	—	315	125	77	105	80	140	230	290	195	—	—	325.
192	♀ ad.	" 8	Lepus callosus callosus.	Ears, width, 90.	660	560	68	105	—	310	127	75	100	75	133	220	270	190	—	—	330.
193	♀ ad.	" 12	Red Rock, A. T.	Ears, width, 90.	775	445	51	104	120	190	125	270	330	78	114	170	192	82	88	—	245.
194	♂ ad.	" 16	Between Maricopa and Gila, A. T.	Type of Dipodomys merriami Mearns.	280	110	23	36	37	49	40	149	170	12	36	31	73	10	13	—	72.
195	♂ ad.	" 23	New River, A. T.	Type of Dipodomys merriami Mearns.	217	159	17	32	34	41	43	46	58	26	37	51	70	3	8	22	95.
196	♂ ad.	Winter 1884-5	Spermophilus tereticaudus.	Desert Station, A. T. kept alive and died at Terde.																	
228	♂ ad.	May 15	Helicconcolor.	Was poisoned near Hance's Rancho. It killed a young cow. A hunter's skin presented to me by Mr. George Hance.																	
227	♀ ad.	April	Spermophilus tereticaudus.	Helicconcolor.																	



Handwritten text in the left margin of page 18, including the number 30 and various illegible characters.

*Calyptra costae*

Measurements of specimen not preserved. ♂ ad. Shot between  
 Bumble Bee and New River, A.T., March 27, 1885. 89; 116; 47; 24;  
 cul., 17.5; gape, 21.5; tarsus, 4.5; mid. toe + cl., 7; el., 3.

Nest No.	No.	No. of Eggs	Name.	Locality
3	4/3	0	<u>Buteo borealis calurus</u> . No. 1 is greenish-white, fading to pure white in the most numerous and largest at the greater end. No. 2 has the same character, but with irregular markings. No. 3 differs in having the markings of two darkest and largest at the lesser end. embryos slightly advanced. They are of a No. 4 has the blotches varying from Vandyke-brown shell. The were removed entirely by scraping the nest. While hunting Quails in a steep and nest in a tall piñon-tree. She was lying dead nearly fresh, and I succeeded in conveying bulky, much concave on top, lined with were several feet and a half-eaten leg bird did not approach, but was afterwards	Hance's branch, 10 mi. W. of Ft. Verde
2	0	—	<u>Harpodornis cinerea bairdii</u>	Maricopa, Arizona.
3	0	—	<u>Campylorhynchus brunneicapillus</u> Shape oval, rather pointed. Ground-color, pale, gray and dull reddish. Nest a large, handsome among the spiny joints of a large cactus lined with fine grasses and bright feathers. The entrance is through a contracted tubular and flew away to a distant cactus skimming up into the branches and scolding in	Maricopa, Arizona.
4-1	0	—	Shape, elongated oval. No. 1 was added and was easily blown. The re-ground-color of "a" is creamy-white, spotted aggregated to form a circle around the great	? Maricopa, Arizona.
4	0	—	All contained large embryos and were dried. Ground was about the greater end with dark sepia, reddish were purple-chopped like the cactus Wren's and placed in this region. The parents could not Longicauda, but live in a creamy or buffy ground	? Maricopa, Arizona.

Date	Measurements.
1885	
Mar. 25	49 X 60 ; 48 X 59 ; 49 X 60. Their ground-color cabinet. No 1. has distinct smeary blotches of Vandyke-brown, end, but sparsely scattered distributed over the whole egg indistinct and granular, interspersed with paler dots and are most numerous towards the smaller end. shades, Vandyke-brown, and purplish-brown, sparingly (yellowish-brown) in places. These eggs are slightly weather-stained, and contained rounded oval shape, considerably more pointed at one end, to pale purplish-brown, the paler markings not overlaid by shell down a little.
	rocky ravine, I shot a female Red-tailed Hawk upon her upon her three eggs when I climbed to the nest. They were them safely in to camp on Ash Creek. The nest was bark and green twigs of piñon. Upon the margin of the Desert Flea ( <u>Lepus sylvaticus arizonae</u> ). The male seen hovering over the spot. Height of nest 35 feet.
March 31st	a, 20 X 27; b, 19 X 27.5. Oval in shape, much smaller spotted with small irregular blotches of light yellowish-brown and grass, with a few feathers of Gambel's Quail.
March 31st	a, 17.5 X 24; b, 18 X 25; c, 18 X 25; d, 18 X 25; e, 18 X 24.6. buffy salmon-color, indistinctly speckled all over with purple-shaped horizontal structure, firmly fastened. Externally composed of bright reddish stems of a plant of Scott's Oriole, Quail, Road-runner and its own species. entrance opening. The parent dropped to the ground close to the ground and alighting at its base, hopping its peculiar voice.
March 31st	a, 17 X 25; b, 17 X 26; c, 18 X 25; d, — X — (broken). mainly three contained large embryos and were dried. The all over with brownish-red and pale lilac, the spots end. Nest indistinguishable from those of the Cactus Wren.
March 31st	a, 17 X 25.5; b, 17 X 25.5; c, 17.5 X 25.5; d, 18 X 25.5. color buffy-white, spotted all over but chiefly in a circle of brown and lilac. The nests in which this and the above set were taken like their nests in the large spiny, deciduous oak (Schollae) be seen. The eggs closely resemble some eggs of <u>Setaria verreauxi</u> instead of pure white



Nest No.	Nest.	No. of Parents	Name	Locality
$\frac{B}{4}$	0	3865, ♀ ad.	<i>Campylorhynchus brunnicapillus</i>	Red. Manicopa 3 <sup>rd</sup> house, Grande
$\frac{B}{3}$	0	3863 ♂ ad.	<i>Harporhynchus cinereus brundirei</i>	Sweet Water, Arizona
$\frac{a}{3}$	0	3862 ♀ ad.	<i>Harporhynchus curvirostris palmeri</i>	Manicopa, Arizona
$\frac{c}{4-1}$	0	3867, ♂ ad.	<i>Campylorhynchus brunnicapillus</i>	Casa Grande, Arizona.
$\frac{D}{7}$	0	—	<i>Campylorhynchus brunnicapillus</i>	Casa Grande, Arizona
$\frac{c}{3}$	0	—	<i>Harporhynchus cinereus brundirei</i>	Picacho Station, Arizona.
$\frac{B}{3}$	0	3877, ♀ ad.	<i>Harporhynchus curvirostris palmeri</i>	Red Rock, Arizona
$\frac{D}{3+1}$	0	3878 ♂ ad.	<i>Harporhynchus cinereus brundirei</i>	Near Red Rock, Arizona.
$\frac{1+3}{1+3}$	—	—	<i>Molothrus ater obscurus</i>	—

Date 1885	Remarks Measurements, etc.
April 1 <sup>st</sup>	<u>a</u> , 17 X 24.5; <u>b</u> , 17.5 X 24; <u>c</u> , 17.5 X 24.5; <u>d</u> , 17.5 X 25.5. salmon-color, speckled all over with dull red and purplish to the whole egg. Nest built in a "cholla" cactus.
April 1 <sup>st</sup>	<u>a</u> , 19 X 27.5; <u>b</u> , 19 X 27; <u>c</u> , 19.5 X 27. -color, grayish-white, faintly mottled with pale yellowish-brown, but uniformly distributed. The nest the ground. The male was shot as it flew from Mockingbird's, but lined with fine weeds and feathers.
April 1 <sup>st</sup>	<u>a</u> , 21 X 28; <u>b</u> , 21 X 27; <u>c</u> , 21 X 28. Eggs, oval, rather spotted all over with brown and lavender. The spots are very The nest is very bulky, composed outwardly of twigs with grasses and an occasional feather or tuft of joints of a cholla cactus.
April 2 <sup>nd</sup>	<u>a</u> , 18 X 24; <u>b</u> , 18 X 25; <u>c</u> , 18 X 25; <u>d</u> , — X — (broken). color pale salmon-color, speckled all over with purplish-cholla cactus 5 feet above the ground.
April 2 <sup>nd</sup>	<u>a</u> , 17 X 23. Perfectly fresh. Both the ground-color near having a buffy tint. Position of nest similar to above.
April 3 <sup>rd</sup>	<u>a</u> , 19 X 26; <u>b</u> , 19 X 27; <u>c</u> , 19 X 26. Contained large Colors, not reliable.
April 3 <sup>rd</sup>	<u>a</u> , 20 X 27; <u>b</u> , 21 X 27; <u>c</u> , 20 X 26. Fresh. Parent (♀) into some sagebrush, but flew back towards the imitated a cry of pain, and I shot it. Nest very large, roughly lined with fine roots and stems of plants. 4 feet from the ground. Its note of alarm "quirt-quirt," color, pale greenish-blue, minutely spotted all over with lavender.
April 3 <sup>rd</sup>	<u>a</u> , 19 X 26; <u>b</u> , 19 X 26.5; <u>c</u> , 19.5 X 26.5. ( <i>H. brundirei</i> ). <u>a</u> , 16 X 21 ( <i>M. ater obscurus</i> ). light
	Ground color pale greenish-gray, spotted with "cholla" cactus, much smaller and more compactly with grasses and other soft material. The male was secured. An egg of the Dwarf Cowbird was in shape; Ground color grayish-white, spotted all spotting most conspicuous about the but. great end.

Nest No.	Nest?	No. of Parents	Name	Locality
$\frac{a}{1}$	0	—	<i>Harporhynchus redivivus lecontei</i>	Red Rock Station, A. T. pointed. Ground-color, greenish-blue, over with brown and lavender, the spots white and form a wreath near the cactus seven feet from the ground. vicinity.
$\frac{E}{4}$	0	—	<i>Campylorhynchus brunnicapillus</i>	Near Red Rock, Arizona Shape and markings like those already des- cribed. indistinct circle or wreath about the
$\frac{F}{1+3 \text{ young}}$	0	—	<i>Campylorhynchus brunnicapillus</i> , <del>two</del>	Piacho, Arizona described. Ground-color buffy-salmon-color pale color. Three half-grown young were preserved <sup>together</sup> with the added egg. Nest built
$\frac{E}{4}$	0	3884 ♀ ad.	<i>Harporhynchus cinereus bairdii</i>	Near Billito Station, A. T. hatch. Nest built in the midst of a dense
$\frac{F}{4}$	0	—	<i>Harporhynchus cinereus bairdii</i>	Near Red Rock, Arizona. fresh. Shape oval, rather pointed. Ground- lavender and yellowish-brown. Built in a
$\frac{1}{1}$	0	—	<i>Lophortyx gambeli</i>	Red Rock, Arizona. It was taken from the body of a <sup>very young</sup> <del>female</del> <sup>immature</sup> Liepert our cook. Shape obovate.
$\frac{E}{2}$	0	—	<i>Campylorhynchus brunnicapillus</i>	Tucson, Arizona rather elongated oval and pointed. Ground- and <sup>pale</sup> purplish-gray, the latter color
$\frac{1}{1}$	0	—	<i>Harporhynchus curvirostris palmeri</i>	Fort Lowell, Arizona Egg, oval, <sup>more elongated than usual</sup> ground-color, greenish-blue, fringed pale lavender.
$\frac{1}{1}$	0	—	<i>Harporhynchus curvirostris palmeri</i>	Near Fort Lowell, A. T. cactus, 6 feet above the ground. Eggs like
$\frac{a}{0+1}$	X	3901, ♂ ad	<i>Poliophtila melanura</i>	Between Ft. Lowell & Mt. S. P.
$\frac{a}{0}$	X	3901, ♂ ad	<i>It macrurus</i>	External depth, 85; external Nest delicately woven of fine strips of <del>grey</del> bark of peant down, lined thickly with cottony the region. The parents uttered a cat-like the cat. Built in the lower fork of a mesquite.

27

Date	Measurements and Remarks.
1885.	
Apr. 3 <sup>rd</sup>	a, 19X29. Fresh. Shape, an elongated oval, rather deeper in color than <i>H. paimeri</i> , sparingly spotted all largest at the great end, where they tend to accumulate. The nest was built in a cholla. The parents were not secured, nor seen in the
Apr. 3 <sup>rd</sup>	17.5X24; b, 17X24; c, 17X24; d, 17X23.5. Eggs fresh. -cried, except that the purplish-gray spotting forms a greater end. Nest built in a mesquite 20 feet from ground.
Apr. 3 <sup>rd</sup>	a, 18X23. Egg added. More obtusely oval than those, the <sup>light</sup> gray spotting predominating, giving the egg an unusual in the nest, two of which (No. 3881 & 3882 juv) were in a "cholla" cactus 3 feet from the ground.
Apr. 4 <sup>th</sup>	20X26; 20X27; 19X27; 19X26. Eggs nearly ready to cholla cactus 4 feet above the ground. Eggs destroyed.
Apr. 4 <sup>th</sup>	a, 19X26; b, 18.5X25.5; c, 19X26; d, 19X26. Eggs, color <sup>pale</sup> greenish-gray, blotched all over with very pale mesquite-bush, 6 feet above the ground.
Apr. 4 <sup>th</sup>	24X32. This egg is pure white, immaculate. <sup>had occurred</sup> that we shot for food, and given to me by Private
April 5 <sup>th</sup>	18X26; b, 18X26. These eggs are unusually large, color, salmon-color, marked all over with dull red giving a dusky or neutral color to the egg. Nest in the ground.
April 5 <sup>th</sup>	20X28.5. Nest built in a cholla cactus. Eggs fresh and evenly spotted all over with brown and
April 7 <sup>th</sup>	21X28; b, 21X29. Nest built in a "cholla" that described above. (c).
April 7 <sup>th</sup>	The nest contained five young a day or two old. breadth, 65; internal depth, 35; internal breadth, 30, delicate shreds of plant fibre, mixed with wool particles down of a composite weed growing abundantly in meadow note, and scolded vehemently while I examined



28 Nest No.	Veg.	Veg. of Parents	Name.	Locality.
H 5	0	—	<i>Campylorhynchus brunneicapillus</i> .	Bet. Ft. Lowell & Mtn Spring A. J.
2	X	—	<i>Mainocephala nitens</i> .	near Ft. Lowell, Arizona.
II	—	3902 ♀ ad.	<i>Lophortyx gambeli</i> .	Between Ft. Lowell & Mtn Spring.
B 4	X	—	<i>Polioptila melanura</i> .	San Leon, Arizona.
1-4	0	—	<i>Carpodacus frontalis</i> .	Stein's Pass, New Mexico.
O O	X	—	<i>Polioptila melanura</i> .	near Lordsburg, N. Mex.
a 3	0	—	<i>Sturnella neglecta</i> .	near Haze, New Mexico.

Date 1885.	Measurements and Remarks.
April 7 <sup>th</sup>	a, 17.5 X 24; b, 17.5 X 24.5; c, 17.5 X 25; d, 17 X 24.5; e, 18 X 24. described above. Nest built in a holocrine 10 feet high.
April 7 <sup>th</sup>	a, 16 X 24; b, 16 X 23. Contained small embryos was found to skin them. The nest was built in a
April 7 <sup>th</sup>	a, 24.5 X 32; b, 24 X 30; c, 24 X 31; d, 25 X 31.5; e, 24 X 33; f, 24; 31; g, 24 X 31.5; h, 24.4 X 32; i, 24.5 X 32.6; j, 24 X 32; k, 24 X 32. These eggs are obovate, color is pale buff, tinged in one or two (especially "a") with dark chocolate-brown, varying to a dark rich chestnut, by spell, but coming out brightly upon scraping away the
Apr. 13 <sup>th</sup>	a, 11 X 14; b, 11.5 X 14.5; c, 11 X 14; d, 11 X 14.2. ing a ground-color of greenish-brown, freckled all over with
Apr. 14 <sup>th</sup>	15 X 21. Nest built in a cedar. Ground-color, light of dark sepia brown at the great end.
Apr. 15 <sup>th</sup>	Nest just finished. Built in the fork of a greasewood above except that it lacks the hair and asclepias, and from the stems of some weeds. It is well and firmly
Apr. 18 <sup>th</sup>	21 X 28; 21 X 27; 20 X 27. Perfectly fresh. Two the 3rd ("c") has a greenish tint. All are spotted, chiefly (over)

Nest No.	Vet?	No. of Parents	Name	Locality
441 A 12.	0	—	at the great end with reddish brown and which was artistically roofed with drift of the short-gramma grass, and a <u>Callipepla squamata</u> .	Foot-hills of the Chiricahua mountains near Bowie St., A.T.
			24X31; 23.5X31; 24X30; 24X32; in form obovate, or rounded at one taper creamy-white finely and uniformly the grassy slope, still about a mile from arroyo. I almost trod upon a <del>nest</del> . The nest was in the centre of a tuft of species, surround by yellow poppies, red flowers. I followed the parent to the ran so swiftly and hid so cleverly that and I missed her.	
2/3	0	3960 2a.	<u>Campylorhynchus brunneicapillus</u>	near Foot-hills of Chiricahua Mts., near Bowie St., A.T. described already. The nest was built bulky, composed outwardly of handsome feathers, among which were those of <u>squamata</u> , Scott's Quail, Road-runner
a 1	x	—	<u>Tyrannus (vociferans?)</u>	Dragoon Summit, A.T. creamy-white, sparingly, but bold identification was not positive, although <u>vociferans</u> ; but this egg does not agree in a black walnut ( <u>Juglans nigra</u> ) 30 egg. The nest is rather bulky, composed together into a compact structure measuring depth, 30; internal width, 90. Many interwoven in its structure, and help to form a
a 142 young	—	—	<u>Pipilo fuscus mesoleucus</u>	Dragoon Summit, A.T. Ground color, creamy-white, with a very lines of dark, purplish-brown chiefly <sup>clustered</sup> markings, and numerous blotches. The nest was. This nest was built in two young and an added egg, which chiefly of small sticks, weed-stalks of bark from the grape-vine. The parents flew

Date 1885	Measurements and Remarks
Apr. 30 <sup>th</sup>	lilac. The female was flushed from her nest, grasses, placed upon the ground close beneath bed of golden-poppies with orange centres. 24X32; 24.5X32.5; 24X31.5; 24X32; 24X31.5; 24X32.7; 24.5X33.2; 24X32. Eggs nearly fresh, <sup>some with a greenish tint</sup> ring and pointed towards the other, ground color spotted all over with yellowish-brown. "While ascending the foot-hills; about fifty yards from a drooping female "White-top" Quail, sitting upon her twelve eggs grass, perfectly circular lined with feathers of its own and close beside a cactus ( <u>Yucca</u> ) bearing handsome arroyo, and got within a few feet of her, but she got nearly out of range and then flew away.
Apr. 30 <sup>th</sup>	18X24; 17X24; 17.5X24.5. Eggs, fresh; like those in a hole, seven feet from the ground, very grasses and red plant stems, lined thickly with both species of Quail ( <u>Lophortyx gambeli</u> and <u>Callipepla</u> and Mourning Dove.
May 3 <sup>rd</sup>	17X24. Elongated oval. Ground-color, <del>rich</del> blotched with chestnut and pale grayish-lilac. The the bird seen near the nest was undoubtedly <u>P.</u> with Dr. Brewer's description. The nest was built feet from the ground and contained a single fresh of small twigs and grass, stems of plants felted neatly in external depth, 90; internal width, 130; internal cottony, lomentum stems of a yellow composite are close, soft lining, to which are added a few feathers and some rabbit-hair.
May 3 <sup>rd</sup>	17X24.5. Egg, oval, obtuse at the small end, faint bluish cast, with a few bold dashes and zig-zags and the great end. There are a few <sup>fewer</sup> lighter brown of faint lavender - also aggregated at the great end, and a grape-vine, <sup>six</sup> feet from the ground. It contained latter I preserved. The nest was bulky, composed and grasses, together with ribbon-like shreds around me and uttered loud cries of distress.



37-  
No.Nest  
No.Not  
Parents

Name.

Locality

Date

1885.

Measurements and Remarks.

33

2	0	—	<i>Geococcyx californianus</i> . Between Benson and Mtn. Sp.	search. Perhaps a bluish tinge, immaculate an average nest of the Green Heron, but for lining, being constructed otherwise, mesquite 4 1/2 feet from the ground.
5	0	—	<i>Mimus polyglottus</i> . Mountain Spring, A. T.	Eggs, fresh; oval; ground-color a dull chiefly at the larger end, in one egg, alder, 7 feet above the ground.
2	X	—	<i>Phainopepla nitens</i> . Mountain Spring, A. T.	extremity. Ground-color, grayish-white egg these spots have an olive cast and around the great end, and a few scattered, 20 feet above the ground. The male was The nest was saddled on to a large dry a few dry twigs, the rest of the nest of plants and fine twigs and stalks of 340; external breadth, 110; internal
2 young	X	40-69, 7 ad.	<i>Oreolus alexandri</i> . Mountain Spring, Arizona.	mal depth, 33; external width, 42; note grape-vine. Composed of frayed strips of with the cottonwood down.
B 1	0	—	<i>Buteo borealis calurus</i> . Between Mountain Spring and Fort Lowell, Arizona.	The shell is punctured with minute holes shape and color the egg is not unlike flew from the nest in a mesquite tree escaped. It was 15 feet from the ground and weed stalks, having coarse dival.
a 4-3	0	3984 7 ad.	<i>Icterus parisorum</i> . Major Fort Lowell Arizona.	Aval in shape, obtusely pointed at the dots and lines of blackish-brown about spots, most of which are aggregated as she flew from her nest, which is tall soapweed. It was woven of the strong cup-shaped, contracted at the base.

May 4 <sup>th</sup>	31 X 40; 31 X 41.	Shape, elliptical-oval, white with a . This nest, like two others found the same day, resembled contained a little grass, stems of plants and crowding entirely of small sticks, placed in the fork of a . Other nests were in mesquites 6 and 15 feet high.
May 4 <sup>th</sup>	19 X 26; 19 X 25; 19 X 25; 19.3 X 25.5; 19 X 25,	Bluish-green, blotched with yellowish-brown and purple. forming a <sup>broad</sup> <del>nest</del> around that extremity. Nest in a box
May 4 <sup>th</sup>	16.5 X 23; 16 X 22.	Eggs, oval, pointed at the small <sup>small</sup> <del>large</del> marked with dark purplish-brown spots. In one are larger. There is a broad zone of slaty-lilac blotches dots of light brown. Nest built in a walnut-tree, sitting upon the eggs, which were slightly incubated. <sup>ly</sup> <del>ly</del> of a black walnut tree ( <i>Juglans nigra</i> ), resting on composed of a mixture of cottony <del>stems</del> <sup>heads</sup> and stems weeds, together with a few shreds of bark. External depth, 2.5; internal breadth, 1.5-5.
May 5 <sup>th</sup>	The nest contained two young.	It measures in external depth, 18; internal width, 18. Placed in a <del>swinging</del> <sup>soft</sup> bark, silk, vegetable fibres, hair, feathers, lined apparently
May 5 <sup>th</sup>	45 X 60.	Oval in form, pale blue, immaculate in many places, as if done with a fair-point. In that of the <sup>great</sup> Blue Heron ( <i>Ardea herodias</i> ). The parent upon my firing at some Sealed Quails near by, and strongly built of <del>coarse</del> sticks lined with grass concavity.
May 5 <sup>th</sup>	17.5 X 2.3.	Egg contained an embryo. Ground-color smaller end. Ground-color, gray, marked with a few the larger end, and blotched with pale lilac-brown in a circle about the great end. The female was shot as suspended beneath the dependent fronds of a white <sup>fine</sup> threads of this plant, lined with cottony fibre in equate structure.

Nest No.	Nest?	Pos. of Parent	Name.	Locality.
$\frac{8}{3-1}$	0	—	<i>Harporhynchus cinereus benderi</i>	Fort Lowell, Arizona
$\frac{a}{5-2}$	0	—	(slightly greenish) gray, mottled all over with in a grape-vine overhanging a small tree <i>Lanius ludovicianus excubitorides</i>	Tucson, Arizona
$\frac{a}{4}$	0	—	ground-color, buffy-white without any brown and lilac. The arrangement are pretty evenly distributed over the whole circle around the great end, while in the small end. The nest was coarsely built in a dense mesquite, close to the rat closely upon her nest, and was in defending their progeny and cried	
$\frac{5-3}{3}$	X	3994, ♀ ad.	<i>Myiarchus cinerascens</i> Tucson, Arizona Ground color, buff, uniformly marked laid on in longitudinal dashes and more <i>Poliophtila melanura</i> . Red Rock, Arizona	
$\frac{B}{3}$	0	4010, 2 ad. 4011, ♀ ad.	greenish-blue ground, speckled all over with reddish end, together with a few pale lilac or drab spots. than those of set B. $\frac{B}{7}$ , and the eggs are in the fork of a greasewood five feet high materials including fine shreds of bark feathers all closely interwoven, the fine measurements. External depth, 80	
			Contracted somewhat at base. <i>Harporhynchus sedivorus lecontei</i> . Between Casa Grande and Water, Arizona.	
			opening to an point at the small end within Ground-color, greenish-blue, somewhat yellowish-brown and lavender sparsely small extremity. in "b" the marks are of one and confluent near the great end, The nest was built in a mesquite resting a neighboring branch. It was about 7 words resting upon a mass of large feathers. Both parents were secured	

Date	Measurements and Remarks.
1885.	
May 7 <sup>th</sup>	18.5 X 25; 18.5 X 26. Eggs, fresh; ground-color, light pale yellowish-brown and lavender. The nest was built beside the Santa Billito Creek. The female parent was shot.
May 7 <sup>th</sup>	19 X 24; 19 X 24; 18.5 X 24. Egg, rounded oval, tinge of green, blotched with pale amber, <del>and</del> purplish of the markings differs in the three eggs. In one they egg, in another the darker blotches form a distinct third there is an equally distinct zone around the built of sticks lined with grass, weeds and feathers roadside. The eggs contained large embryos. The female nearly captured by hand. Both birds were fierce loudly.
May 7 <sup>th</sup>	$\frac{17}{17}$ X 21; $\frac{17}{17}$ X 22; $\frac{17}{17}$ X 22; 17 X 21. Oval in shape with purplish-brown and lavender both colors or less blending in places. The nest was built at the close to the ground. Nest composed of hair and feathers. I found time to skin them.
May 8 <sup>th</sup>	10.5 X 14; 11 X 14. Oval in shape, having a brown spots, tending to form a wreath around the great near the great end. The spots are a trifle smaller also appreciably less in size. The nest was placed above the ground. It is gray in color, composed of plant stems, fine mycelate filaments and a few delicate ribbons of bark forming the bulk of the structure; external breadth, 60; internal depth, 45; breadth, 35.
May 11 <sup>th</sup>	19 X 29; 20 X 28.5; 19 X 29. Shape an elongated oval of being rather rounded and obtuse as in <i>H. palmeri</i> . <i>a</i> has large blotches of <del>tan</del> <i>a</i> has large blotches of <i>tan</i> deeper than <i>H. palmeri</i> . "a" has large blotches of <i>tan</i> scattered over the egg, a few extending nearly to the the same colors, but reduced to fine spots quite numerous but scarcely extending to the opposite extremity at all. upon a for and receiving additional support from just above the ground, composed of fine grasses and sticks loosely placed, and lined grass and a few are shot directly from the nest.



- 3 0 — *Lanius ludov. excubitorides* Maricopa, (Arizona)  
Oval. Ground-color, creamy-white, <sup>black</sup> scarce,  
great end with yellowish <sup>brown</sup> and ~~purplish~~ <sup>black</sup> base.  
The nest built in a mesquite ~~and~~ <sup>of</sup> ~~for~~  
sheds, interwoven of weed stalks, grasses.
- 4 0 — *Pipilo aberti*: "Gila" on the Gila River.  
(Cressaria borealis)  
The nest was built in an arrowwood,  
ribbons of inner bark of the cottonwood  
pale blue, each egg marked at the  
dots and dashes of dark brown, <sup>as to</sup> appear  
spots of pale lavender. A few of the  
except the little end. One egg has a
- a 1 0 4022 ad. *Philopelia leucoptera* Salt River at Phoenix, Arizona  
at both ends. Pure white, immaculate  
and fragile in structure, built upon
- 4 0 — *Pipilo aberti* Phoenix, Arizona.  
Shape the <sup>about</sup> same as the set described above.  
marks are fewer and almost restricted to  
Vest built in the fork of a mesquite
- 1 0 — *Pipilo aberti*. Phoenix, Arizona  
end. Ground-color, light blue, marked  
small reddish-brown spots; but there  
cottonwood hedge by the roadside, ten
- 4 0 — *Pipilo aberti*. Phoenix, Arizona.  
fresh. Oval, rather obtuse. Ground-color,  
cinnamon reddish-brown zigzag lines  
The nest was resting upon a few  
and ribbons of bark of the cottonwood  
the road.
- 2 3 0 4046 ad. *Harporh. curvirostris palmeri* near Hall's on New River, A.T.  
ground-color, greenish-blue, finely and  
lavender. As usual the nest was  
shielded by the bristling joints of  
embarrassment in attempting  
tastefully with reddish weed stalks.

- May 12<sup>th</sup> 18.5 X 24.5; 18 X 24; 18.5 X 24; 18 X 23; 18 X 24.5.  
tinged with greenish. Spotted, chiefly in a zone - about 4" -  
and lavender, <sup>the colors sometimes blending</sup> a few spots extending to the opposite extremity  
four feet from the ground. Composed externally of  
fine roots and a few feathers.
- May 13<sup>th</sup> 18.5 X 24.5; 19 X 26; 19 X 25; 18.5 X 25.5.  
about 4 feet from the ground, composed chiefly of  
The eggs are oval, having a ground-color of  
greater end with a few bold spots, and <sup>zigzag</sup> many lines  
perfectly black except in a strong light, and a few  
smaller dark spots are scattered over the whole egg.  
wreath of delicate lines and spots around the great end.
- May 13<sup>th</sup> 22 X 29. Shape, oblong, nearly equally rounded  
Nest composed of sticks and stems of plants, transparent  
a slanting willow among ~~the~~ closely growing branchlets
- May 14<sup>th</sup> 18 X 24; 18.5 X 25.5; 19 X 24; 18 X 24.  
but with a few markings of brownish red. The dark-brown  
the great end. They are less spotted than the other set.  
in a dense mesquite grove in the edge of town. Height, 15 feet
- May 14<sup>th</sup> 18.5 X 26. Rather oblong and obtuse at the small  
about the great end with blackish-brown, and a few  
are no lavender spots. The nest was built in a  
feet above the ground.
- May 14<sup>th</sup> 19 X 23.5; 18.5 X 25; 19 X 26; 18.5 X 25. Eggs  
pale blue, marked at the greater end with black and  
dots and dashes. There are no lavender spots.  
strong twigs, and composed, as usual, of weeds  
The nest was built in a cottonwood hedge ~~near~~
- May 15<sup>th</sup> 20 X 26; 20 X 27; 20 X 27. Oval in shape;  
evenly spotted all over with yellowish-brown and pale  
very large, built in a "cholla" cactus, and so  
deciduous spines that I experienced considerable  
to reach the eggs. The inner cavity was lined  
and ~~a little~~ some fine roots.

Nest No.	Nest?	No. of eggs	Name	Locality
$\frac{E}{0}$	X	4040, <sup>1</sup> bad.	<i>Poliophtila melanura</i> .	Near Hall's Ranch, New R.
$\frac{1}{1}$	0	—	of a gray color, composed of fine shreds cottony product of the cottonwood, rather light externally, 80; breadth externally, 60	
$\frac{A}{1}$	0	4047, <sup>1</sup> bad. 4048, <sup>2</sup> bad.	<i>Lophortyx gambeli</i> Swilburg's, on the river.	
			Observed, pointed at the small end, Spot-	
			<i>Buteo abbreviatus</i> New River, Arizona.	
			at one end. Clear bluish-white, in not resist the temptation to follow it sharp whistle of the Hawk, and a screamed loudly. It wheeled and looking for its nest in the trees saw the female sitting upon her. With a loud whistle she flew. The nest was coarsely built cavity, lined with a few cotton cottonwood 25 feet above the ground.	
$\frac{B}{2}$	0	4053, <sup>1</sup> bad.	<i>Melospelia leucoptera</i> New River, Arizona	
			smaller at one end. The nest was branchless, was frail in structure, were immaculate white. The male	
$\frac{A}{3}$	X	4049, <sup>1</sup> bad.	<i>Cardinalis virg. igneus</i> Gillett on the Agua Fria R. (Elight)	
			elongated oval, obtuse at the smaller end with <del>not</del> under-brown and lavender entire built. The nest was built close tall arrowwood ( <i>Tessaria borealis</i> ), about nest uttering a sharp metallic call-note secretive. Their crests were erect, and ammunition. The nest is composed of lined with small roots and <del>and</del> saucer shaped, measuring in external 60; internal breadth, 70. Locality, a	
$\frac{B}{2}$	0	4050, <sup>1</sup> bad.	<i>Buteo abbreviatus</i> Agua Fria near Swilburg's	
			pointed at the <del>challenged</del> at one "a" is finely sprinkled with dark sepia spots having a smeary, granular appearance.	

Date  
1885.

## Measurements and Remarks.

May 15<sup>th</sup> Newly finished nest, built in fork of a mesquite; of bark, united by fine silky fibres, lined with the bit ~~fur~~ and some white horse-hair from mane or tail. Internal depth, 45; internal breadth, 37 mm.

May 16<sup>th</sup> 24.5 x 1.5. A single egg found upon the ground - red with olivaceous brown blotches upon a pale buff ground.

May 16<sup>th</sup> 43 x 55. Egg rounded oval, slightly smaller - maculate. The River was so attractive that I could not resist the temptation to follow it. In a large grove of tall cottonwoods I heard the moment later ~~one~~ flew close over my head and came towards me again, when I shot it. After, thereabout, I walked a little further up stream, and nest in a cottonwood near the opposite side directly towards me, and was also shot.

of rather large sticks, with considerable cottonwood leaves only, and placed in the fork of a ~~the~~

May 16<sup>th</sup> 22 x 31; 22.5 x 32. Shape oblong-oval, noticeably built upon an oblique willow trunk among some composed of sticks lined with some grass. The eggs bird sat closely upon the eggs until driven off and shot.

May 16<sup>th</sup> ~~18.5 x 27~~; 19 x 27; 19 x 27; 19 x 26.5. Eggs <sup>slightly tinged with yellow</sup> end. Ground-color, ~~greenish~~ - white, dashed all over, the blotches becoming confluent in one egg over the by the roadside, conspicuously placed in the fork of a 6 feet above the ground. Both parent came about, the evincing much anger but without rather shy and both could have been secured had I not run out of quantity of plant-stems and ribbon-like pieces of bark and grass, the inside being smoothly lined. depth, 120; external breadth, 135; internal depth, narrow cañon several hundred yards from the stream.

May 17<sup>th</sup> a. 45 x 63; b. 43 x 61. Eggs oval, considerably end. Ground-color, white, <sup>with yellowish</sup> rather stains in spots. brown ~~at~~ speckle, and a few paler brown and lavender ~~the~~, all of the marks most numerous at the large ~~extreme~~



Nest No.	Nest No.	Nos. of Parents	Name	Locality
			<p>"b" is evenly blotched with very pale large embryos and were emptied of yolk screaming towards me when this flows through a canon below form a large grove <sup>the trees being</sup> of unusually <sup>deep</sup> discovered in a tall cottonwood close sat upon the eggs, but flew out of not return but disappeared after I waited several hours did not return and was exactly like the first one green leaves of cottonwood attached and contained the two eggs, which first found; but there can scarcely be was shot close to the nest, while the nest and was black, with white <sup>band</sup> tail first nest was absolute. The female <sup>immediately</sup> towards me and was shot <del>before</del></p>	
C 2	4058	♀ ad.	<i>Melospiza leucoptera</i>	Black Canon near Bumblebee, pointed at the small end, pure built in a green-barked acacia or palo position. The female sat upon the nest with my hand, when she flew a little ("c-coo") mournfully, until shot.
B 3	4051	♀ ad.	<i>Cardinalis virginianus igneus</i>	<sup>Acacia Ariz at Swilling's</sup> Rancho, Arizona, obtuse at the small end. Ground-color: brown and purplish-lavender dashes, which spotted with dark brown, rusty brown and The nest was built on an oblique with and strips of inner bark; shallower nest several times before she could be
2	40		<i>Zenaidura macroura</i>	near Antelope, Arizona pointed at the small end. Immature
4	40		<i>Mimus polyglottus</i>	near Bumblebee, Arizona Ground-color, greenish-blue, blotched in a barberry, <sup>3</sup> feet from the

Date  
1885

## Measurements and Remarks

yellowish-brown and lavender. The eggs contained their contents with great difficulty. The female <sup>again</sup> I entered the woods and was shot. The ~~woods~~ Swillings and the cottonwoods in the level bottom. I searched a long time for the nest which I finally to the place where I shot the old bird. The male range before I could obtain a shot, and did <sup>searching</sup> over the canon a few times, and, although <sup>50 feet from the ground</sup> The nest was reached with infinite exertion, - composed of sticks, lined only with a few to the twigs. The nest was rather concave differ in size, shape and markings from that any doubt about the identification, for the parent other bird was distinctly seen when flying from the ~~nest~~. On the other hand the identification of the was seen upon the nest; she arose and flew straight ~~the nest~~ <sup>out of view</sup>. Her mate was also procured.

May 17<sup>th</sup> 23x32; 23x31. Oval in shape, obtusely white, immaculate, shining somewhat. The nest was <sup>on the upper slope and</sup> verde, directly over the roadside in a conspicuous and did not leave until I attempted to catch her near, up the hillside and began to "c-coo" ("c-coo")

May 17<sup>th</sup> 17.5x24.5; 16.8x25; 18x26. Elongated oval, ~~peculiar~~ bluish-white, flecked all over irregularly, with tend to be elongated longitudinally. "c" is more conspicuously purple marks, most numerous near the great end.

<sup>supported by small twigs,</sup> in trunk, ten feet from the ground, of stems grasses then set No. 3. The female was flushed from the secured. The male was so shy that I could not secure it.

May 18<sup>th</sup> 21x29; 21x29. Eggs elongated oval, rather late white. Nest built on a shelf of rock on a cliff. May 18<sup>th</sup> 18x25.5; 19x25; 19x24.5; 19x25. Ovoid, all over with rusty brown and purple. Nest built ground.

7	0
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<u><i>Mermin polyglottus</i></u>	near Antelope, Arizona
Ground-color, gray, boldly blotched	
the blotches confluent near the great	

9. 0

*Campylopusichus tranterii* near Antelope, Arizona.  
Shape oval, pointed at the small end. Ground  
pale purplish-gray. Nest built in a

$\frac{22}{4}$	3
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Phelocoma woodhousei near Bumblebee, Arizona  
indistinguishable by either size or  
-blue ~~face~~ ground, blotched with two  
matched by the set of four mocha  
the deep hillside, after leaving Bumblebee  
look for Woodhouse's Jay. In a few  
the scrub oaks, where I soon found

oak. <sup>yellow</sup> ~~The female~~ parent was sitting  
whence I could scarcely drive her  
was built of coarse twigs, lined with  
ready to hatch. The shells were

④ 0

4062, <sup>1</sup>bad.  
4063, <sup>0</sup>bad.

Cardinalis virginianus, species Bigbug, Arizona  
bluish-white, spotted all over with purple  
apex of the great end. The nest was  
yellow-stump, upon the hollow summit of which  
~~Cottonwood tree~~, beside Bigbug Creek, about  
nest; lost out of way on the way to  
attached to the drooping twigs upon which  
I searched a long time before discovering it

5-2	0
-----	---

Geococcyx californianus. Bigbug, Arizona  
slightly sinuater at one end. Color  
and erosions. The nest was a flat,  
thicket of scrub oak. The eggs were  
in my saddle-pockets. The nest

\* large dry pieces of cow manure  
Zenaidura carolinensis, Ash Creek, Arizona.  
smaller at one end. ~~The~~ The form  
crossing a grassy region, ~~from~~  
scraped in ground, with no prints  
marked with a few calcareous nodules

\*The above nests and eggs comprise 26 species, represented by nine (9)

May 18<sup>th</sup> 1907. Shape, elongated oval, obtusely pointed  
and finely granulated with rusty-brown and purple,  
nest in mesquite, 4 feet above ground.

May 18<sup>th</sup> 17.5 x 23.5; 17.5 x 23.5; 17.5 x 23.5; 17 x 24; 17.5 x 24.6.  
-color, salmon-color, marked all over with dull red and  
mesquite, 5 feet from the ground.

May 18<sup>th</sup>. 21X29; 21X29; 21X29; 21X29. Eggs absolutely  
marking. Oblong oval in shape, with a greenish-  
shades of brown, and purple. The colors are exactly  
-birds taken (Set No. 4) Same day. "As we ascended  
we came to scrub oaks and cedars, and I began to  
minutes one was seen in a deep ravine amongst  
the nest close beside the road, in a dense thicket of  
and slipped off upon the ground in the thicket,  
and by thrusting the bushes with a pole. The nest  
rootlets. The eggs, four in number were just  
preserved by breaking them in two."

May 19<sup>th</sup> 1954. 19.5 x 27. Egg rather elongated oval; ground-color, and yellowish-brown, the spots confluent on the built among some drooping branches of a large <sup>was a nest of *Geothlypis trichas*</sup> ~~was a nest of *Geothlypis trichas*~~ <sup>*Geothlypis trichas*</sup> ~~from the ground~~. It was a deep, well-made cup. Both parents were preserved. The nest was found it partly rested. The situation was so unusual that <sup>(like a Wood Thrush)</sup> Next externally of coarse sticks, then a layer of cottonwood leaves, lined with root

May 19<sup>th</sup> 31 X 42; 31.5 X 42.5; 28 X 41. Shape oblong-oval  
pure white, immaculate, chalky, marked with furrows  
an even <sup>plateform</sup> structure, placed in the center of an isolated  
partly covered with rubbish. Two of them were broken  
was built of sticks, leaves and grass, with several  
admixed.

May 19<sup>th</sup> 21 X 27; 21 X 29. oblong-oval, but slightly  
was flushed from beneath my horse's feet while  
of stumps, rocks or trees. The eggs were in a hollow  
of a nest whatever. Eggs, immaculate <sup>white</sup> ~~pink~~.  
~~and circular ridges.~~ Size in all 186 eggs. 18 new shells.

and circular ridges.  
nests and 65 sets of eggs, making in all 186 eggs. 18 new species



# Narrative & Itinerary of the Expedition.

March 25<sup>th</sup> 1885.

We left Fort Verde, Arizona, in a pouring rain, but it soon cleared off, and the ride was pleasant.

We marched 16 miles to Ash Creek, upon which we encamped. The wagons moved slowly and did not reach camp until after dark, on account of muddy roads. The teams had to double up and pull one wagon at a time. Captain Russell's private buggy broke down and was tied on behind one of the company wagons.

Our party, at starting, consisted of Col. Clendenin, Capt. <sup>Paul</sup> and Mrs. Russell, Dr. Clendenin and myself, with "K" Troop of the 3<sup>rd</sup>.

The Doctor and I stopped at Hance's Rancho at the Guenega and hunted for an hour. Along the creek is a fine growth of deciduous oaks and a number of evergreen oaks. Among these trees were a number of Lewis's Woodpeckers (Caprimulgus torquatus), of which we shot several. While hunting Gambel's Quails (Lophortyx gambeli) in a rocky gulch, I shot a female Red-tailed Hawk (Buteo borealis calurus) sitting upon her nest in a tall piñon-tree (Pinus edulis). I climbed the tree, and took from the nest three eggs, nearly fresh, which I succeeded in carrying safely into camp.

A few of the cottonwoods along the Verde River were just beginning to show a few green leaves, but a number of those in Copper Cañon, together with several other trees, were in leaf. The season is manifestly earlier this year than on the same day of last, when we first arrived at Verde; for many plants which are now in flower were just coming out of the ground last year.

Among the flowers seen in the Cañon were bunches of yellow violets (Viola nuttallii),

enfillare, purple verbenas, Indian pinks, large yellow cruciferae, large yellow umbeliferæ, and low, white ones, after we left the cañon. A pretty blue lilaceous plant resembling a bell or hyacinth was flowering profusely.

Several Mockingbirds (Mimus polyglottus) were seen between Copper Cañon and our camp on Ash Creek. They were afterward abundantly present nearly throughout the march. I had seen none in the Verde this year.

The handsome little Black-throated Sparrow were everywhere abundant, and singing pleasantly.

When riding through Copper Cañon, we saw a Raven (Corvus corax carnivorus) fly to its nest upon a ledge in a crevice in the face of a high cliff.

Woodhewer's Jays were exceedingly abundant; and Say's Flycatcher (Sayornis sayi) were common. Buteo borealis calurus (The Western Red-tail). - The nest found (see note on opposite page) was built in a piñon, 30 feet above the ground. I saw the female parent leaving the nest. As she raised her head up over the edge of the nest I shot her with No. 7 shot, with which I was just going to kill some of Gambel's Quails, a large flock of which were running up the rocky gulch before me. The Hawk recoiled from the shock pretty soon and began to flutter upon the nest, finally falling to the ground. I then climbed the tree, not without trepidation on account of the slender top, which bent with my weight. The nest was bulky, composed of large twigs and branches, lined with strips of cedar bark. It contained a considerable depression in which rested the three eggs, which were afterward found to contain small embryos, which were, however, easily removed, and the clutch brought safely home.

About the nest, and upon its edge, were several legs of the Cotton-tail Rabbit (*Lepus sylvaticus arizonae*).

Large flocks of Maximilian's Nuthatches (*Gymnocitta cyanocephala*) roosted in the cedars on a high ridge near our camp.

McNally, my striker, shot a Northern Black Bear (*Lepus callotis texianus*) with his carbine. It was a <sup>pregnant</sup> female, and contained 2 foetuses.

### March 26<sup>th</sup>.

While breakfast was cooking, I found time to blow my hawk's eggs, the parent having been skinned last night while waiting for the wagons to come in.

We left Ash Creek at 7.30 a.m., and marched 36 miles to Bumble Bee. Between Antelope and Bumble Bee were seen the first Giant Cacti (*Cereus giganteus*).

We left Ash Creek when we broke camp, and followed a trail over higher ground. On the grassy slopes I shot a new bird, the Western Yellow-winged Sparrow (*Coturniculus passerinus perpallidus*), which ran from beneath our horses' feet and vainly attempted to hide in the too short grass <sup>beside</sup> the trail, where I <sup>waited to</sup> shoot it. We were struck by its resemblance not only in habits, but in color pattern, to some of the quails. Its back is quite like the Gambel (Massena Quail); and a still more apt comparison might be made with the common Quail of the Old World (*Coturnix* - whence the generic name although Dr. Louis says [Blueb. List N. Am. Birds, 1882, p. 52] "Arbitrary diminutive of *coturnix*, a quail; said to be so called from the resemblance of the sound of its voice to the sound of the word."). Only one of these birds was seen.

Several miles farther on we came to Ash Creek again and skirted it for a little way, finding a beautiful grove of cottonwood in full foliage. Here I procured a specimen of the diminutive Yellow-headed

Lit, and found a number of Song Sparrows (*Melospiza fasciata fallax*) of the same peculiar characteristics as those breeding in the Verde Valley and Great Colorado River, which have not yet been characterized and subspecifically named; therefore I continue to designate it as *Melospiza fasciata fallax* [which it is].

When we reached the Agua Fria, we halted for a noon rest in a grove of cottonwoods of remarkably large size. We measured the largest with a tape line, four feet above the ground. It measures 34 feet in girth, and has no excrecences or morbid growths at that part, the trunk being symmetrical and rather tall, although the branches are very long and drooping, nearly reaching to the ground. At this place dozens of Sparrow Hawks (*Tringunculus sparverius*) were rollicking in the tree-tops. They were doubtless mating! Their loud cries reminded me of those of the Flickers - still more of the Gila Woodpeckers. A very rare North American bird, the Mexican Black Hawk (*Urubitinga anthracina*) was here seen, but could not be shot. I took the first North American specimens that have yet been secured north of Mexico, on the Rio Verde last season.

As we advanced, descending slowly, we found vegetation more and more advanced; but most of the flowers in bloom were such as occur at Verde a few weeks later. Among them were umbelliferae, cruciferae, compositae, Indian pinks, cypress, orange-colored poppies, fumroses (white), and a fringed legume with compound leaves like a small mesquite ("Goss-in-the-mist", Mrs. Russell said they resembled), and some large and handsome legumes of the genus *astragalus*.

Near Antelope, we saw "H" company marching ahead of us, towards Bumble Bee, from Whipple.



We reached Bumble Bee just at sundown. Several birds were shot which unfortunately could not be skinned. I was too tired to sit up longer than to skin my new bird, and the Yellow-headed Tit.

The mammals seen were Coyotes, Rocky Mountain Pine-tailed Squirrels in rocky cañons, a few Gila chipmunks in rocky places, Harris's chipmunk, Desert Hare, Northern Gopher Hare (a very young one was shot, which screamed loudly when caught), Antelope, and a Mule Deer shot by a bandsman near Antelope.

The birds and mammals seen each day are shown in the table and reports sent to the Surgeon General; but I will give some notes occurring passing in my field note-book, from time to time.

Mountain Mockingbird. - One shot; abundant; singing.

Red-vented Thrasher. - A few seen; singing.

Ruby-crowned Kinglet. - Abundant on the Agua Fria.

Yellow-headed Tit. - Many nests seen in haw bushes on the flats of mesquite, etc., along Ash Creek.

White-bellied Swallow. - One flock on the Agua Fria.

A few Rough-winged Swallows, White-rumped Shrikes, House Finches and Oregon Snowbirds were seen.

The Western Meadow Larks, Western Grass Finches and Black-throated Sparrows were singing.

A Californian Condor (Pseudogryphus californianus) was seen feeding on a dead horse with some Ravens, but could not be approached within rifle range, although the Ravens were not shy.

A few Red-shafted Flickers (Colaptes auratus mexicanus) were seen. Some of them may have been Colaptes chrysoides (Malherbe's Flicker).

Gambel's Quail was everywhere common. The males calling their sad notes from the tops of bushes on all sides. We always kept the mess abundantly supplied with them, as the Doctor seemed never to tire of shooting at them.

March 27<sup>th</sup>.

Colonel Bracket arrived at Bumble Bee an hour before we did, and took command. His Adjutant and Quarter Master (Fruits, Stever and Hardie) and Captain Wessels and Frontier River <sup>with</sup> "H" Troop, and the non-com. staff and Band were added to our party until we left Maricopa when they all proceeded to Bowie Station by rail, except the officers (Capt. Wessels and First. Rivers) and troops of "H" Co. of the 3<sup>rd</sup>, who marched with us, commanded by Captain Russell all the way.

Reveille sounded at 5 o'clock a.m. and we left Bumble Bee at 6.30, marching 25 miles to Hall's Rancho on New River.

Col. Bracket gave me permission to ride ahead of the column with Doctor Clendenin. The road through Black Cañon was much better than I anticipated. Costa's Hummingbird (Calyptra costae) was found at the beginning of the Cañon, and soon became very abundant (although flowers were quite scarce). At the foot of Black Cañon we found the first Gila Woodpeckers (Centurus uropygialis) and Leconte's Wrens (Campylorhynchus brunneicapillus). When we reached the Agua Fria, near Sillit, the Cape Saint Lucas Cardinals (Cardinalis virginianus igneus), Vermilion Flycatchers (Pyrocephalus rubinus mexicanus), Yellow-headed Tits (Auriparus flaviceps) and Costa's Hummingbirds (Calyptra costae) were very abundant. The foliage of the cottonwoods here, and farther on along New River near its junction with the Agua Fria, had assumed the dark rich tint of green characteristic of the fully developed leaf, and the trees were feathery with the "cotton", which hung in festoons from the drooping branches. I gathered a quantity of it at Hutson's for stuffing and packing specimens. Harris's chipmunks were here abundant.

and young of both species of Rabbits (Lepus sylvaticus arizonae & Callosotis texianus) of very small size.

An other Jackass Hare was killed, and like the first, contained but two young. The first Vireos (Vireo pusillus) in full song? The greatly increased number of flowers show that the season here is far in advance of Verde, being considerably lower.

When we left Verde, two days ago, only a few cottonwoods showed any ~~signs~~ foliage, while those at this camp are in full fruitage. The "cotton" is used for filling mattresses, and is soft and silky. It can be gathered in large handfuls. The Agua Fria and New River both contain many small fishes and leopard frogs. Only a few lizards have been seen, although more abundant to-day.

Giant Cacti (Cereus giganteus) are abundant all along the way, which is mountainous on every side. The whitish "cholla" cacti, densely clothed all over with long slender spines, with deciduous joints very easily detached, was first seen in Black Cañon. The Cactus Wren like to build their large nests in them, but we saw many of their nests in mesquites. Squirrels were abundant.

It is hardly worth while to give a list of the plants as they are nearly all found at Verde. The first cactus, a handsome red Cereus ( ) was in flower. Euphorbia, daisies and other composites, pink and yellow hennipies and cypress were abundant.

Of Mammals, a few Rock Squirrels (Spermophilus grammurus grammurus) & Hill Blinnings were seen, and Harris's Blinnings was abundant, as were both species of Tares. The Prairie Wolf and a small species of Bat were the only other species seen.

Birds. - The Yellow-headed Tit was everywhere common, as were their nests. Its note is a sharp metallic call.

The Rock Wren and Cactus Wren were both common. I killed two of the latter on a

Helgidopteryx serripennis, Rough-winged Swallows were plentiful. They like to settle on dry limbs.

The House Finch delights to sit upon the summit of the giant cactus and sing. Some of their nests were built in the axils of the limbs. Calamospiza melanocorys was found in large flocks. The Western Grass Finch and Black-throated Sparrow were singing in.

One Kingfisher was seen on New River. White-throated Sparrow was heard calling during the night at Bumble Bee. Bullock's Orioles were first seen to-day, one male on the Agua Fria and an other male on New River.

### March 28<sup>th</sup>

Last night the Doctor and I slept without our blankets. The wagon was upset and broken, and the things were not brought in until near morning. The Col. ordered a rest in camp to-day, so we expected to find time to skin our birds up and repack our baggage. We found some loose straw in which we covered ourselves, our <sup>horse</sup> blankets having been appropriated by soldiers as the night was cold. We both slept well all night. After changing his mind several times and giving contradictory orders, the Colonel ordered the "general" sounded at 7.30 a.m. The men were baking bread, which they had to throw away. We left Hall's Rancho at 8 o'clock and marched 30 miles to the Grand Canal near Phoenix, where we arrived after dark, and found that Mrs. Russell had rustled some nice fresh vegetables and lettuce salad with lobster for our dinner. The day was intensely hot. Most of the Yerming shot were spoiled when we got in to camp. The first few miles of the way was over



some malpais ridges, when we reached a level, desert plain across which our march lay. A few barren mountains were passed, rising abruptly from the plain. They appeared to be volcanic, being covered with malpais rock. The plain was covered with greasewood and cacti. The giant cacti and other species of Cereus, Echinocereus, and arborescent Opuntias as well as the <sup>oval</sup> ~~round~~ flat-topped species of the same genus. We soon captured specimens of a new Thrasher (Palmer's), of which we saw the first specimens yesterday in Black Canyon. While crossing a wide gorge of <sup>(Covillea tridentata)</sup> greasewood, we discovered a new Squirrel (Spermophilus tereticaudus), and shot five specimens. At Desert Well, about the middle of the march, we found Harris's chipmunk associated with the new Spermophile; but the locality was at the base of a mountain piled with malpais rock in which the chipmunks found a congenial home, quite different from the plain in which the Spermophiles were so abundant. The first specimens of the Black-capped Squirrel were also found here.

The desert was bounded by mountains. The only abundant plant was the greasewood (Larrea tridentata) now in flower it exudes a gummy oleoresin, whence its name. The flowers are yellow; stellate. A few cacti of the genus Cereus were in flower - bright red.

#### Mammals:-

Spermophilus tereticaudus Baird. Fort Yuma Spermophile. This singular mammal lives in holes under the greasewoods, which it undermines, excavating chambers and tunnelling beneath the roots. Large, low mounds are formed around the bases of the greasewoods having many holes for entrance and egress. The reason for their

selection in excavating their burrows seems to be that the meshes formed by the fine roots of the greasewood serve to support the dome of their habitation; the soil being everywhere light and loose, would, otherwise, be continually caving in upon their chambers and galleries.

In size and proportions, this animal approaches the chipmunk (Tamias), being of just about the size of Tamias harrisi, with which it was found today; but it is quite different in appearance and action, when alive, from Harris's chipmunk. Its resemblance to a weasel, at times, is very striking. When surprised away from its burrow it tries to skulk unobserved to its hole, and walks low, with its head elevated and poised serpent-like at a right angle to the <sup>vertical</sup> plane of the neck. Those shot had been eating the seeds of a biennial weed, bearing yellow flowers. Their huge stomachs were distended with food that they had the appearance of being about to bear young. They utter a low, plaintive note when disappearing into their burrows. One kept popping its head in and out of the hole, uttering this plaintive cry at each disappearance. This species must be infinitely abundant in the region which it inhabits, for they live in enormous colonies. In many areas every greasewood bush had their burrows beneath it. In habits, it is shy. At a distance they were very often seen sitting up erect like "Prairie Dogs" (Cynomys) at the entrance to their burrows. As soon as they saw us, they usually divided into one of several holes usually found under the bush - always a greasewood, for that was the only shrub found growing over most of the desert; but, if surprised, <sup>always</sup> at a distance from home, they would crouch to the ground and run behind the nearest bush, <sup>alternately</sup> making advances towards the burrow, then

and seeking concealment behind a tuft of grass or weeds.

Tamias harrisi. — The habitat of this species joins and overlaps that of the preceding species (Spermophilus tereticaudus) upon the edge of the desert, whence the foothills rise to the higher mountains. We shot both species together, and observed that their notes and habits <sup>are</sup> quite as <sup>distinct</sup> as their pelage.

Lepus sylvaticus arizonae. — Many half-grown young seen.  
Lepus callotis texianus. — Our ride lasted all day and the early part of the evening. Towards dark numbers of these Hares were seen in every direction. McVally killed all he could carry on his saddle, for use in the Company. The men make a very good hare-stew in camp. Dozens of them were shot by the men for food. Many young were seen.

During the night Bats were flying in great numbers. Coyotes (Canis latrans) were howling in our camp. A large herd of Mule Deer (Oreamnos macrotis) was seen in the foothills near Hall's rancho. One was shot by a soldier.

Birds. — Harporhynchus palmeri. Palmer's Thrasher was abundant all along the way. They must breed very early, for I shot a fully-grown young of the year. They are able to alight with impunity upon the dangerous ~~joints~~ white cacti, whose joints are armed with long, slender, sharp spines; and many were seen perched upon the summit of these cacti, singing a sweet song, especially early in the morning and towards evening. I killed one of these Thrashers and a Cactus Wren at the same shot in a green-barked acacia (Cercidium floridum, Benth. in Gray's). I shot a female as she flew past, with a male in hot pursuit, and brought her, slightly wounded, to the ground, where the male sprang upon her and they had coition, after which both of them escaped,

running through the brushwood and cacti. Besides their loud song, they utter a loud, explosive note when collicking together. <sup>("whi-p-ping")</sup> I did not identify their nests, but some large ones, built in cactus plants, were probably theirs. In habits they somewhat closely resemble the Eastern Thrasher; but ~~are~~ they do not hide and skulk in brushwood as much as the Red-vented Thrasher (H. crissalis).

Polioptila melanura. — A few Black-capped Gnatcatchers, a species that I never saw alive before, were found in the greasewood bushes near the foothills at the edge of the desert, near Desert Well. They have a low call like the Catbirds (Mniotilta carolinensis).  
Auriparus flaviceps. A nest of the Yellow-headed Tit was found in a green-barked acacia near Hall's rancho. It was completed, but no eggs were laid. The parents guarded their home fearlessly, scolding incessantly.

Campylorhynchus brunneicapillus. — The Cactus Wrens were exceedingly abundant. They were heard scolding continually, but seldom came in sight when near at hand. Their nests are seen in nearly every cactus. The few that I examined were empty. They utter a loud cry if pursued when wounded. The white spiny cactus (Opuntia Begelevii I think it is) is its favorite plant, although their nests were seen in other species of cacti of the genera Opuntia and Cereus, and indeed anywhere in dense shrubs or trees.

Mockingbirds and Meadow Larks were abundant and singing, a few Rough-winged Swallows and Green-backed Goldfinches were seen at Hall's on New River. Shrikes were scarce, Grass Finches singing, a few Shore Larks, Say's Pewee, Ravens, Lark Buntings (Calamospiza melanocorys) were seen in large flocks, but one or two were in



nearly complete summer plumage, and they are the first seen this season in that condition. Near Desert Station the first Ash-Moated Flycatcher was seen and shot. The Vermilion Flycatcher (*Empidonax ruber mexicanus*) was seen at Hall's Ranch, but not between there and Phoenix. The country being unwatered and desert.

No Hummingbirds were seen after we left New River, where *Calyptra costae* was very abundant. A few Gila Woodpeckers were seen about Hall's, and on Giant Cacti near there. The Texas Sapsucker (*Picus scalaris*) was seen occasionally along the route.

Red-shafted Flickers were seen for the last time to-day; and *Colaptes chrysoides* was identified positively for the first, although some of those seen yesterday during the last day or two may have been Malherbe's Flickers.

A few Sparrow, Marsh, and Red-tail Hawks were seen. Mourning Doves and Gambel's Quail were infinitely abundant. I practiced wing shooting on horseback, while riding slowly along, and killed both Doves and Quail.

*Oxyechus vociferus*. - Killders have been found everywhere on our line of march, sometimes, as to-day, in the most desert places. On the Grand Canal, their notes were sharply reiterated ~~the~~ outside my tent during the greater part of the night, while I sat skinning Squirrels and Birds.

Water is only found at two places on our march, a distance of 30 miles. At a place called Desert Well, near the point of a low mountain are a few shallow, muddy, alkaline water-tanks, a crumbling building close by. Here we found birds and Rabbits in great numbers. At Desert Station is a deep well, but the water is alkaline. There is a dry bed of a stream there, bordered by shrubbery.

March 29th.

Broke camp at the Grand Canal at 6 o'clock a.m., and marched across the Gila, 20 miles, camping on the south bank of the River. From our camp on the Canal we rode all the way to the main street of Phoenix through a wide avenue shaded on both sides by handsome cottonwood.

The alfalfa was a foot high in the fields, and of a beautiful dark green color, thoroughly to be appreciated after riding over a parched desert.

The town is watered by irrigation, every field surrounded by an acequia. The water is taken from Salt River several miles above the town. The houses and places in Phoenix are cosy and there is verdure and inflorescence everywhere. Roses, oranges and the cabbage palm were in bloom; the houses surrounded by orchards of apple, peach, fig, oranges, apricots, cherries and plums, with plenty of small fruits and vegetables. The population is composed of Americans, Mexicans, Chinese and Indians. Most of the storekeepers were Jews. All the streets are shaded by cottonwoods; and several species of Doves were cooing in the midst of town. Thousands of Red-winged Blackbirds were in full spring chorus in the cottonwood hedges and alfalfa fields along the ditches. Their notes were exceedingly cheerful and pleasant. I shot my first specimen of the Scalded Dove (*Scardifilla inca*) from a cottonwood bough beside the road, and several others were seen. After crossing Salt River, near some Mexican dwellings some more of the diminutive, long-tailed Doves were found and a second specimen secured. I thought I heard cuckoos (*Coccyzus americanus*) calling, but was not positive that they were not some new species of Dove with which I was unacquainted. Many small birds were flitting about in the dense

hedges of cottonwood. Salt River was booming, and we had some fun crossing it. My horse, "Daisy," was the first to cross both forks. The <sup>River</sup> separates a little way below the ferry, into four diverging forks, two large and two small ones; the ford crosses all of them. The river is well wooded with cottonwood and bordered by ranches on the south side. A few Ducks and other interesting birds were seen; but I was wet from crossing the stream, my pony having been in swimming water. My saddle pockets were filled with water, and I was obliged ~~to~~ to stop and dry their saturated contents, as well as my clothing. Meanwhile Mc Nally and I took a good swim in Salt River, but found the current too powerful to swim against. The water was cold and pleasant. The troops crossed safely, a few at a time, although a few of them were carried a considerable distance down the stream. Some Indians crossed on their little ponies. Their dogs had a hard struggle to get across, but finally reached the shore. Their masters took a bath in the river before riding into Phoenix.

After leaving Salt River, we crossed a level desert where there were some Prairie Dog burrows, among which I shot a Burrowing Owl. As we neared the Gila River the road ~~bent~~ bent to the left and passed between a high mountain and a low range of foothills, through a scattered forest of Giant Cacti of large size and much branched. Many of the Woodpeckers' holes in the cacti had Indian arrows sticking out of them, showing where Indian boys had fired at the birds. In one place a young joint of the cactus about the size of an orange and thirty to forty feet from the ground was pierced by two arrows crossed, which indicated fancy shooting for practice.

At the Indian trading station of "Gila" we found large numbers of Indians and one or two adobe buildings and some corals owned by the trader. The Gila was very swift, and we were obliged to wait a long time while the ferry was being repaired. Some six-mule teams on the south bank, loaded with goods for Phoenix, had been incamped for several days, while waiting for the ferry. I got over and lay down upon the clay bank to watch the wagons and horsemen cross, but soon fell asleep and only awoke when it was sun-down. They were still ferrying our wagons across. A large group of Indians were grouped on the further shore and looked very picturesque. One of the Squaws was dressed in green, some in blue and the rest in red. After my tent was pitched for the night, and I had retired an Indian stuck his dusky head between the flaps and grunted until I awoke when he wanted me to buy some green grass which he had gathered along the riverbank, which I was very glad to do, as there was no grazing on the way and not a spear of grass in our camp. No hay was raised here. After this I was awakened several times by Indians anxious to sell me some grass; but at last I made them understand that I owned but one horse and had all I wanted. At sunset, Dr. Glendenin awakened me. He had some lemons and wanted to make some lemonade in our tin cup. While we drank our sour lemonade, the Doctor called my attention to a beautiful White Egret (*Garzetta candidissima*) flying up the River. It alighted on a cottonwood across the stream and sat there until dark. A few Ducks were also seen flying past. The banks of the Gila are of a reddish clay, and bordered with Cottonwoods, a few willows, and a broad belt of arrowwood (*Lissariz*) and other dense underbrush and weeds.



A number of Prairie Dog (*Cynomys columbianus*) <sup>arizonensis</sup> were seen between Salt River and the Gila.

The cottontail (*Lepus sylvaticus arizonae*) was seen in Phoenix, and the Northern Jackass Hare (*Lepus callotis arizonae*) was seen on the desert between Salt River and the Gila.

A few mountain mockingbirds (*Micropus montanus*) were seen and heard while crossing the desert. A single Palmer's Thrasher (*Harporhynchus curvirostris palmeri*) was seen in the desert south of Phoenix. Yellow-headed Vireos were very abundant along Salt River and the Gila.

Yellow-breasted Chat (*Icteria virens longicauda*) were very abundant of Salt and Gila Rivers; and *Dendroica auduboni* was also common, as were *Leucis Wren* (*Campylorhynchus brunneicapillus*). The following list embraces the other species seen to-day:

*Stelgidopteryx serripennis*. Rough-winged Swallow. Abundant  
*Vireo pusillus*. Little Vireo. Singing everywhere in brush-wood, especially in the town of Phoenix.  
*Lanius ludovicianus excubitorides*. White-rumped Shrike.

A few were seen.

*Carpodacus frontalis*. House Finch. Singing about Phoenix in numbers. One of the most conspicuous birds.

*Astragalinus psaltria*. - Green-backed Goldfinch.

*Spizella breweri*. Brewer's Sparrow. Common at Phoenix.

*Amphispiza bilineata*. Black-throated Sparrow. A few were singing near the Gila and Salt Rivers.

*Pooecetes gramineus confinis*. Western Grass Finch. Singing; common at Phoenix.

*Philo aberti*. Abert's Towhee. Very common in suitable places at Phoenix; frequented the rows of cottonwood trees along the ditches.

*Melospiza fasciata fallax*. Mountain Song Sparrow. Common on Salt River and on the Gila.

*Calamospiza melanocorys*. - In flocks.

*Agelaius phoeniceus*. - Red-and-buff-shouldered Blackbird. - Some of the thousands seen at

Phoenix, Salt River and the Gila may possibly have been variety *gubernator* although one specimen shot on the Gila had a restricted buffy border to the red of shoulder. Still it belongs clearly to variety *phoeniceus*.

*Sceloporus cyanocephalus*. Brewer's Blackbird at Phoenix.  
*Molothrus ater obscurus*. Abundant on the Gila River.

*Corvus corax carolinensis*. American Raven. Scarce.

*Sayornis sayi*. Say's Flycatcher. Abundant.

*Tyrannus vociferans*. Cassin's Kingbird. First seen about Phoenix.

*Myiarchus cinerascens*. Ash-throated Flycatcher.  
*Trochilus alexandri*. Black-chinned Hummingbird.

Only one, on the Gila River.

*Ceryle alcyon*. Belted Kingfisher. On the Gila.

*Picus scalaris*. Texas Goshawk. At Phoenix.

*Colaptes chrysoides*. Malherbe's Flicker. Abundant.

Its notes resemble the Common Yellow-shafted species.

*Centurus propygalis*. Gila Woodpecker. In giant cacti.

*Buteo borealis calurus*. Western Red-tail

*Furnaceus sparverius*. Sparrow Hawk. } A few.

*Perisoreus cyaneus hudsonius*. Marsh Hawk

*Geothlypis aenea*. Turkey Buzzard.

*Scardafilla inca*. Sealed Dove. First seen in the avenue of cottonwoods leading to Phoenix, where I shot a female. Several were seen in the town of Phoenix; and I procured an other specimen on the south side of Salt River.

*Lymnortyx gambeli*. Gambel's Quail.

*Zenaidura macroura*. Mourning Dove.

*Oxyechus vociferus*. Killdeer. About Phoenix, Salt River, and the Gila.

*Nettion carolinensis*. Green-winged Teal. Two on the Gila.

*Mergus serrator*. Red-breasted Merganser. One on Salt River.

*Ardea candidissima*. Little White Egret. One alighted upon a small cottonwood beside the Gila, and remained there several hours, until dark.

March 31<sup>st</sup>. Temperature 104° F.

Left Lila Indian Agency on the Lila River at 5 o'clock and march 16 miles to Maricopa, on the Southern Pacific Railroad.

The entire distance traversed was through a desert, bordered by distant foothills, along the edge of which are forests of Giant cacti, some of which were found along the road. A sluice of the Lila was crossed a few miles from the River, along which were some cottonwoods and a quantity of bulrush and cat-tails; also plenty of green grass, in which Meadow Larks and Thrashers <sup>(Cinobesognites)</sup> were singing. The rest of the country <sup>was</sup> bare of grass, sandy, and covered with scattered sagebrush and cacti (*Opuntia*, *Echinocereus*, *Cereus*, and *Echinocactus*), with occasional areas of bare white sand, where the sun's reflection was terrible. The day was intensely hot. The little *Spermophiles* (*S. tereticaudus*) were very abundant, and three of them were shot. An Indian seemed to take great pleasure in seeing me shoot at them off of my horse. He would ride ahead and point to them. Another interesting discovery was Leconte's Thrasher (*Harporhynchus redivivus lecontei*), of which we saw but one pair of birds, both of which I shot. They ran and hid with as much agility and cunning as the Roadrunner. Some large white lizards scuttled into their burrows at the side of a sandy arroyo, and resembled the Thrashers, than which they were scarcely swifter, both running before me with great speed and disappearing from view. They seldom arose from the ground, and then only skimmed over the brushwood a little way and then ran swiftly in zigzags among the bushes and cacti. They were secured with great trouble and exertion, for which they were doubtless the more highly prized. The female's

ovary showed that four eggs would constitute the complement, and they would soon have been deposited.

We were glad to reach Maricopa, being very much heated and fatigued. Just as we entered the town I saw the Cowbird Longspur (<sup>Phalaropus</sup> ~~Phalaropus~~ *macconni*) feeding upon a bridge over a dry ditch, and secured the specimen. Horns of the mountain Sheep or Bighorn (*Ovis montanus*) were nailed above the doors of a corral. We afterward learned at Tucson that Mountain Sheep occur in the Santa Rita or Santa Catalina Mountains, and that several were killed by hunters there during the past winter and sold in the market of Tucson. Large flocks of Yellow-headed, Brewer's and Cow Blackbirds ~~were~~ infested the town and especially the corrals. Maricopa was intensely hot. At the hotel we found good food, accommodations and baths, but slept in our tent, after skinning our birds and *Spermophiles* - such of them as were not spoiled by the great heat. Thermometer 104° F. The water at Maricopa is supplied by wells which are several hundred feet deep, we were informed.

March 31<sup>st</sup>.

Temperature 102° F. in shade.

In camp at Maricopa.

Dr. Klendenin and I

went out hunting early in the morning, and were gone from 7:30 a.m. until 10:30 a.m. when the roasting heat drove us back to our tent. The Black-throated Sparrow, Brewer's Sparrow and Mockingbird were the only species at first met with. Brewer's Sparrows were in small flocks in the sagebrush and scattered mesquites, and twittered in chorus, somewhat as the Tree Sparrow (*Spizella montana*) does. Its love song is a fine, insect-like performance which somewhat resembles the song of the Warblers of the *Helminthophaga* genus.



of some birds here in the same manner. I started  
 a hawk, but they were not of the same species as  
 the one long before I could get in the range, and  
 I finally turned and met the Doctor who had found  
 a nest of some southern bird and brought me  
 the eggs. They were not been identified. They are  
 a little larger and more elongated, but otherwise  
 resemble the eggs of the Long-tailed Chat, a bird  
 which never resides on the barren desert region,  
 however, and the nest was totally different  
 from the Chat's, being globular with an entrance  
 at the side like the Cactus Wren's. It was built  
 in a large columnar cactus (*Opuntia*). We at  
 once set about to find more nests in the cacti,  
 but found an other nest and quite a lot of eggs  
 exactly like that described above. We also found  
 several nests and eggs of the Leach's Wren (*Leach-  
 wren* *leachii* *brunneicapillus*). The song thrasher  
 would be *Coccyzus*, and we found them so very wild  
 that we failed to secure a single specimen. Their song  
 was loud and fine, comparing favorably with the best  
 efforts of the Eastern Brown Thrasher. They sat upon  
 the top of the bar, widely scattered mesquites, and flew to a  
 distance whenever approached, dropping down low and  
 performing a part of each flight under cover of the saguaro.  
 According to the Doctor the bird is like a Shrike. Their  
 flight was very difficult to follow, and at last managed  
 to find the Doctor and myself.

Nests and eggs. - We found a nest of the Leach's  
 Wren containing five eggs hard set upon. Another  
 nest contained young several days old. Two other  
 nests (described above) with side entrances were found  
 but the eggs, four in number in each case, were totally  
 different. They were nearly incubated, and only one  
 that was added could be preserved in the usual way,

but the other was dried and afterwards described  
 minutely and their dimensions taken at length.  
 There is no clue to their identity as no birds were seen  
 near the nests. Another fine nest was found  
 containing two eggs of *Geothlypis trichas*,  
 Bendire's Thrasher, perfectly fresh. The eggs of  
 the Leach's Wren were a beautiful salmon color  
 spotted with slate color and a dull red, and the nests  
 were always lined with feathers of several species  
 of birds as well as their own.

The most interesting mammal observed was  
 the Mexican Flea (*Lepus arizonae* *arizonae*), a species  
 which I had never before met with. The Northern  
 Jackass Rabb (*Lepus arizonae* *arizonae*) was also seen.  
 The broad plains are almost all made level,  
 very barren or scrubby, and have characteristic  
 by a great quantity of animal life. There are wide  
 tracts of bare white sand, with other areas of  
 scattered sagebrush, with a few mesquites, and yet  
 all dead. Among the arbores are some of the  
 -quites a larger size than those with a shrubby  
 plant bearing ~~small~~ <sup>thick</sup> ~~leaves~~ <sup>leaves</sup>.

There are occasional patches of handsome arborescent  
 cacti ten or twelve feet in height, in which large  
 lizards were basking, but watchful and ready  
 to scuttle off down the trunk to the ground  
 at the slightest alarm. The large whitish lizards  
 were largely numerous, and many small ones were seen.  
 Towards the base of the mountains, the  
 giant cactus (*Cylindropuntia gigantea*) holds sway, and  
 a few scattered ones are found all over the desert.  
 The "bee-hive" cactus (*Echinocactus* *virginicus*?) was  
 occasionally seen, and bore large yellow fruits  
 in a circular cluster on the summit of the plant.  
 They are as large as a small lemon, free from  
 spines, <sup>pleasant</sup> ~~hard~~ <sup>to</sup> taste, and gilded with large black seeds.

April 1<sup>st</sup>. Maximum temperature 104° F.  
 We started from Maricopa early in the morning and  
 marched 26 miles to Casa Grande. The country  
 was a level desert with alternating belts of sagebrush and  
 greasewood, with the mesquites mixed in places forming  
 groves. A Rattlesnake was killed the first seen on the trip.  
 Leconte's Thrasher was met with almost as far as  
 the station of Sweet Water, where it was left behind. One  
 nest was afterwards found at Red Rock Station, the  
 most eastern locality where we have found it. Although  
 a number of these pale Thrashers were seen, they were  
 so excessively shy that only one specimen could be  
 secured. Their swift flight on foot and <sup>forest</sup> habits were  
 again noted, and several were heard singing delightfully  
 "Dunlin" Thrasher (*Harporhynchus Cuiusensis bendirii*)  
 was first seen to-day, although its eggs were taken at  
 Maricopa yesterday. Palmer's Thrasher was also  
 common and both of their nests and eggs were found.  
 Many nests of the Cactus Wren (*Campylorhynchus*)  
 were seen in the cacti, of which we found several  
 arborescent species. Captain Russell rode in his  
 buggy and took the wrong trail, which led him to the  
 mines and Indian village of the Maricopas, making  
 his trip over 40 miles. The new Jack Rabbit (*Lepus*  
*alleni* <sup>*var. sinuatus*</sup> *callotis*) was again seen. At the water tank  
 6 miles from Maricopa the engineer had some Quail  
 traps in which he told us he captured all of them  
 that he needed in his yard. They come there in  
 great numbers and take Rabbits for water.  
 To the right of the railroad is an arroyo and  
 stream, its presence shown by the large mesquites  
 and shrubbery growing in a belt above it.  
 The two ~~species~~ varieties (*callotis* and *texianus*) of  
*Lepus callotis* were about equally numerous.  
 We failed to secure any specimens. The day was  
 the hottest we have yet experienced.

April 2<sup>nd</sup>. Maximum temperature in shade 102°.  
 At Casa Grande, we found good stores, and  
 laid in a supply of canvas and sundries to get  
 us on the road to Tucson. I had to visit a saloon  
 in the town and obtain a saloon card for my drink  
 and sell off my horse before we started. It was  
 eight o'clock before we got away from town, and  
 we marched 19 miles to Pinal Station, arriving  
 early in the afternoon.

The country the same as yesterday, greasewood,  
 sagebrush, and a bush with pulpy leaves and red  
 berries, eaten by Quails and Thrashers. *Trachypus*  
*filicinus* was seen in a nest of the Gnatcatcher. The  
 new *Lepus alleni* was very abundant, as many as four  
 or five being seen at once. They gallop off together  
 and are rather shy and hard to approach, running  
 sometimes clear out of sight across the level desert.  
 Their white rumps make them very conspicuous. When  
 running the hinder parts are depressed, and they  
 jump like Kangaroo-like, while the Northern Jack  
 Rabbit is behind when running. The two species  
 here live side by side, and maintain their subspecific  
 characters. The fact that the Mexican Hare is  
 much larger — and this fact is contrary to the  
 generally received opinion of authors — than the  
 Northern form leads me to believe that the two  
 so-called varieties of *Lepus callotis* are two dis-  
 tinct and separate species, living together in  
 the region traversed by us and maintaining  
 their characteristics distinctly under precisely the  
 same conditions of environment. These Hares come  
 into the corral to drink during the hottest and driest  
 weather, in droves of twenty (20) at a time.

A Mexican brought all his milk and cheese  
 we could use into our camp, and we skinned  
 21 canines, and the Doctor hunted until dark.  
*Valeriana sulcata* was abundant and two specimens were taken.



April 3<sup>rd</sup>

Temperature 102°.

We rode 14 miles to Red Rock Station. The country was about the same, except that vegetation was more open to the westward of some of the peaks and a large number of Gambel's quail were found, many of which were seen in search of food. In a branching joint of a large cactus we found a nest of the Melospiza Flier (Coccyzus erythrophthalmus). Four heavy charges of shot at the base of the branch brought it to the ground. The nest was only the bare cavity, lined with the dry and indurated tissue of the cactus forming a hard <sup>wall</sup> around the cavity resembling the shell of a gourd. In this burrow were three <sup>naked</sup> nestlings. They are evidently early breeders. Their eggs, as well as those of the Gila Woodpecker and several species of Cuckoo might easily be obtained by the aid of a ladder; but we had no means of reaching the nests in the holes in these enormous cacti, which afford a home and shelter to several species of small mammals. Leactus Wrens breed in the axils of the branches, and Hawks, Scores and the House Finch also make this singular plant their home and defense. None of these cacti are yet in bloom. We passed by the foot of a high, castellated butte (Piacho Peak) <sup>to the right</sup>, which for several days has been a prominent landmark. Along its base is a forest of Giant Cacti and Green-barked acacias. Both species of Jackass Hares were seen, but the Mexican (variegated) is much more abundant, and has been for several days past. Several of them were frequently seen running together, but they were more commonly seen in pairs. The eggs of three species of Thrushes (Palmer, Leconte and Reid), Leactus Wrens and Scores Cowbirds were taken. The well at Red Rock Station is 260 feet deep, the water pumped up by an engine. A Scrub was seen and shot at several times.

April 4<sup>th</sup>

Marched to the aqueduct a few miles from Tucson, 28 miles. The country was about the same. We stopped at a large Mexican rancho and got good water for our horses and ourselves. The interior was a large tank.

Sceloporus lanceolatus and a Prairie Fox (Vulpes macrotis merriami). ~~Wrote~~ <sup>Wrote</sup> ~~in the~~ <sup>in the</sup> ~~hand~~ <sup>hand</sup> apparently a sample of words about us, and a small fox for the purpose of shooting it, but climbed so long attempting to extract a tight cartridge from his belt, that the fox finally let up and walked slowly to his den, a burrow in the cacti, and finally disappeared just as the doctor was going to fire.

Before we came to the Mexican cattle ranch mentioned above, we passed, near Pinito Station, a rancho partly surrounded by Giant Cacti artificially planted to form a fence; but a number of the large "por-his" cacti (Echinocactus virginicus) had evidently been killed by mistake, and left <sup>in</sup> <sup>the</sup> <sup>place</sup> <sup>of</sup> <sup>the</sup> <sup>original</sup> <sup>fence</sup>. The owner of the rancho was a <sup>trunk</sup> <sup>Englishman</sup> who refused us a drink of water as well. This is the first rancho we have seen along the Southern Pacific Railroad. It was a shut rancho, but <sup>owner</sup> <sup>had</sup> some horses and cows besides.

After leaving the Mexican rancho we soon got into a growth of large mesquite, nearly equal in size to those at Fort Mojave, on the Colorado River, and found signs of Black-bellied Snatecatchers, Black-bellied Thyridopterus, Crimson Flycatchers and other birds, and passed a number of ranches and Mexican dwellings, where we purchased "cacha" (milk). Roadrunners were numerous about the houses. We crossed an aqueduct where the Mexicans owned enormous herds of swine. Along the stream were handsome mesquites in which were numbers of Hooded Crows (Icterus cucullatus) and Vermilion Flycatchers.

The last journal route we followed, a 'back' route, from the river to below the station. It did not seem more arduous than the former one, but with on the trip, but time, and was not long (28 miles) and the weather hot so we did not investigate much, but killed all the Gambel's Quails we could rise without getting off our horses. When we reached the dry bed of the Santa Cruz River we found a wide belt of white sand, bordered by large cottonwoods in which Yela Woodpeckers were cackling, and quarrelling, and soon scared the large *Accipiter* upon which the Command had swooped. A Calaca Eagle was seen near our camp, but could not be approached near enough for a shot.

Some Mexicans brought milk, cheese and green grass for our horses, and one of the boys pointed to some birds flying upon my pannier and exclaimed "Soldadita!" (little soldier) and singled out <sup>the</sup> Vermilion Flycatcher (Myiophobus ruber mexicanus) again exclaiming, "Soldadita!, Soldadita!" his eyes sparkling with pleasure and admiration. I was very pleased to learn this name of the Mexicans, so very appropriate for this gorgeous little bird.

The last five miles of to-day's march was through a country very rich in animal life, ~~and~~ <sup>which</sup> would richly repay a long and thorough examination.

April 5<sup>th</sup>

Marched from the acequia near Tucson to Fort Lowell, A. T., eleven (11) miles. The Doctor and I left camp early, and crossed the acequia, and rode through the Mexicans' ranches, and the mesquite groves and cottonwoods to Tucson. We saw the Red-vented Thrasher again here, and the Zone-tailed and Mexican Goshawks, the latter (Accipiter velox) for the first time. The Lucy's Warbler (Helminthophaga luciae) and Yellow-headed Sapsucker

were much more abundant, the former being everywhere.  
 Audubon's Warbler and the Black-bellied Flycatcher were  
 very abundant in the orchard-like groves of tall mesquite.  
 The houses were built of mesquite posts which are very  
 durable, and many mesquite trees are growing in the  
 grain-fields of the Mexicans. They seemed to have  
 a great many children, and were fond of them. One  
 long-bearded old man was holding a little child on his  
 lap and kissing it tenderly. Their houses are surround-  
 ed by cotton-wood-trees in which many species of  
 birds were singing. The old Mexican town of Tucson  
 is quaint and curious. There are many handsome  
 residences and once two pretty good hotels, and  
 some fine public buildings. The houses are adobe  
 often having a porch around the second story and an  
 open corridor through the center. They are square  
 or rectangular with (mostly) flat roofs. We called  
 upon Father Antoine, and found him very polite  
 and courteous when we explained that our object  
 was to obtain a permit to visit the old Church of  
 San Xavier, and wrote the permit in Latin.  
 The Doctor did the Latin, and the good priest was not  
 informed what our name was, so he wrote "admit  
 the bearer and his friends". Unfortunately we were unable  
 to avail ourselves of this permit, as our horses were  
 too much lagged by the long marching and heat, with the  
 proper load nor sufficient water. The ride from  
 Tucson to Fort Lowell (called) was pleasant over  
 an excellent trail road, slightly rising to the base  
 of the mountains near which runs the Santa Rulito  
 River, a small stream with well wooded banks  
 in the rear of the Post of Fort Lowell. The "cholla"  
 cacti were abundant and a usual occupant of  
 nests of Bendir's and Palmer's Thrashers and Cactus  
 Wrens. <sup>(Lepus alleni merriam)</sup> ~~Dozens of Mexican Hares~~ were seen, but  
 none of the shorter variety. <sup>(Lepus texianus waterhouse)</sup> The principal vegetation



(Larrea mexicana)

aside from cacti, is a grassy, scrubby growth  
 with a few scattered trees, some of which are  
 up to the size of small trees about the Post.  
 Dr. Hopkins, the Post Surgeon, put me up in the  
 Post and asked me to stay at his house, and when  
 I declined to do so, in all seriousness, urged me to  
 bring a shield the evening, which latter I consented  
 to do. I saw over a Lacy Warbler was carrying  
 materials into a hollow trunk of mesquite for its nest,  
 and ~~with~~ <sup>the</sup> ~~birds~~ <sup>of</sup> ~~land~~ <sup>of</sup> ~~air~~ <sup>was</sup> ~~seen~~ <sup>near</sup> ~~our~~ <sup>camp</sup>  
 (Camp) (Cardinalis virginianus cyaneus). I was surprised  
 to find that Dr. Hopkins had learned from me how to  
 make excellent bird-sticks, and had collected a  
 number of specimens of the most beautiful birds  
 found near Lowell. He went out with me for a  
 short hunt and we soon secured a large Hawk  
 and the first Gadwall Duck that I had seen, as well as  
 a brown large flock. We spent the evening in looking  
 over specimens, and in gossip. Weather very hot.  
 Lowell is a beautiful post well watered from the  
 Pecos and shaded by masses of handsome cotton-  
 woods, surrounded by large mesquites. The River  
 is a narrow stream flowing in the center of a  
 wide bed of sand, beautifully wooded on both sides.  
 Behind the Post, rise the Santa Catalina <sup>and the Santa Rita to the southward</sup> Mountains,  
 which are rugged and broken by deep gorges, and  
 wooded with pines on the summit. This region  
 has never been carefully explored. The foothills  
 are covered with stately "sahuaras" or Giant Cacti,  
 in which Dr. Hopkins has found the smallest  
 American Owl (Micranthus whitneyi). The quarters at  
 Lowell are excellent. They are built of adobes, with  
 wide halls and piazzas, the latter shaded by a  
 beautiful variety of the ocotilla (F. splendens)  
 whose leaves are as green as when growing in a  
 natural state although the poles are merely thrust into the  
 ground and nailed above. We had a refreshing bath in the Pecos

April 6<sup>th</sup>.

In camp at Fort Lowell. In the morning, Dr. Hopkins  
 Dr. Hopkins and myself went shooting. We followed the  
 Pecos a mile or two and found birds in great num-  
 -bers. Among them were Pileolated and Audubon's Warblers,  
 several species of Flycatchers, beautiful Violet-green  
 Swallows (Tachycineta lepida mexicana), and  
 several species of Flycatchers were abundant. We  
 found one nest containing young that were scarcely  
 able to fly. (Macropipra nitens) was excessively  
 abundant, as were Hooded Orioles, Canyon Towhees,  
 and colorful Finches. Lila's Woodpecker and Macomber's  
 Flickers were abundant, but the latter so shy that  
 none were shot. Four species of Blackbirds and  
 the Meadow Lark (Stimella neglecta) were abundant.  
 Dr. Hopkins shot a handsome Swainson's Hawk,  
 but we did not carry it home. Lacy Warbler was  
 one of the most abundant birds, and singing constantly.  
 The Yuma Spermophile (Spermophilus tereticaudus)  
 is exceedingly abundant in and around Fort Lowell,  
 and association with man had made them far  
 less shy than those living in the desert away  
 from human habitations.

The groves along the Pecos are pleasant  
 and prettier than any thing we have before seen  
 on the trip, although parts of the black, the Laguna  
 Fria and New River valleys are very attractive.  
 The shade and sound of singing birds, the white,  
 wet sand and cool flowing water and the interesting  
 plants made a very agreeable change from the  
 shadeless, torrid desert with its cacti, greasewood, and  
 sagebrush and mesquites; but we hastened back to  
 the Post at noon and after taking lunch with Doctor  
 Hopkins went to Tucson together with the Post am-  
 -bulance, behind a good team of mules. We  
 made some purchases of fruits and supplies for the  
 march and drove through the entire place. A slender,  
 billed Nuthatch was shot in a willow tree beside the Pecos.







April 9<sup>th</sup>, 1885.

We had a long march to make, and so arose early and left camp before daylight, marching 41 miles to Frisk's Ranch, making the longest march on the trip. The road was good, and, in order to reach camp before dark we delayed very little to hunt for specimens. The country was, <sup>at first</sup> mostly rolling foothills with occasional rocky garnies and level stretches of several miles extent, then for 25 miles rolling and everywhere covered with curled gramma grass, without shrubbery or trees, except where the sparse arroyos crossed the road.

A few "White-top" Quails (*Callipepla squamata*) were seen early in the morning. They were seen perched in pairs upon a tall mesquite or desert willow (*Chilopsis linearis*), and uttered a note like the Guinea Hen's loud enough to be heard half a mile. They also uttered the same notes when in the grass. They were found in valleys near the hills. They flew long distances and ran up hill with even greater speed than Gambel's Quail with which they were associated. Both species could have been killed at the same shot. Their call, when running, is low and ungainly. They do not cover <sup>much</sup> better than Gambel's Quail, and their flight is ~~more~~ longer, the flock separating, and flying in different directions. Towards the end of our march, when near the Point of Mountain a pair was found in the short gramma grass, far from any cover or water. At Fort Grant this Quail and two others (Gambel's and Massena) are found.

The early part of the day was spent in rolling, rocky country, which the White-tops appear to like. Gambel's Quail was found with them, twice in the same flock, or at least in the same place at the same time.

The largest flock of White-tops seen, contained but seven. They frequent by preference hillsides and first such places as Gambel's

which they resemble in position on trees and shrubs at morning and evening and calling loudly. Although when first discovered they usually try to escape by running with great swiftness and hiding behind bushes, tussocks of grass, Spanish bayonets or in arroyos, they usually hide and lie more closely than Gambel's Quail. When a flock divides and disperses in different directions it is very difficult to find the scattered birds without a dog.

During the first part of to-day's march Spanish bayonets, soapweed, muscel and yucca <sup>(Lasioyria wheeleri)</sup> were numerous, but we left them behind and had only gramma grass and a few beautiful annuals: Primroses, yellow, and white, yellow poppies with orange centres, yellow Composites with purplish-red centres and serrate-edged rays, and handsome legume of the genus *Astragalus* and others.

We passed the "Three Oaks" where two white settlers were killed by Indians two years ago, and saw the grass.

There is only one oak left, besides a <sup>live</sup> stump of one other of the three. I climbed the live evergreen oak and examined an old nest, probably a Raven's, as it contained feathers of that bird and was lined with sage, probably the old clothes of the dead white men. At Verde the Raven builds on ledges of rock in the cliffs; but this nest may have been that of the White-necked Raven (*Corvus erythrorhynchos*), my first specimen of which I shot to day, on the ~~whole~~ <sup>whole</sup> the shambles at the Point of Mountain. Dr. Leidenstein shot another on the wing in a "Prairie Dog" town near there.

At the rancho is a large village of Barkning Squirrels (*Cynomys arizonensis* <sup>Mearns</sup> ~~californicus~~) and Borrowing Cows (*Speotyto cunicularia*), in which we hunted for both animals with some success for a couple of hours, while the troops and wagons passed us. The men stopped and shot several Prairie Dogs with their carbines. For miles the burrows of these animals



were thickly scattered over the level plain of clayey soil, which is probably better suited to their habits than the light sand of most of Arizona. Here the "Dogs" fairly <sup>revolted and</sup> overrun the country and their sharp barking was incessant, and their tameness surprising. We had no difficulty in getting near enough to hit them, but their burrows are so constructed that they roll out of reach ~~before~~ <sup>before</sup> they can be reached if not killed perfectly dead, and even when shot dead their lifeless bodies double up into a ball and roll down the steep incline of their burrows simply by gravity. Several of those that we killed could be heard kicking at the bottom of the hole in their hole, quite out of reach, but we managed to procure a number of them. We found that a shot delivered from exactly in front of the animal as it sat at the top of its mound with head and shoulders above the rim of earth which formed a breastwork, would almost always kill them dead. Dr. Clendenin shot two at once that were barking together in one hole. A good many occupied burrows had no mounds around them whatever. The owls were shy and would fly ahead of us until, when tired of leading us on, they would enter a burrow. They commonly sat in the mouth of a burrow just below the level of the surface of the ground and when surprised would fly out or drop down out of sight. Others would sit with their heads exposed, slowly shrinking out of sight as you approach. They usually flew several hundred yards at a flight. On the whole, they were shy.

Twelve dogs were taken in all, and twelve of the nine measured and skinned; but several <sup>skins</sup> were subsequently destroyed, along with all the skulls but one. Wrote to my son, as we did not pass the

place on the return trip. After leaving the "Prairie-Dog" <sup>at the point of the Colorado Mountains</sup> ~~town~~ we crossed ~~hills~~ <sup>hills</sup> of level plain where there was good grass; but nothing but hundreds of Northern Jackass Hares (Lepus callosus texensis) could be seen. We reached camp just in time to arrange our tent and belongings and eat our dinner before dark, and were glad to hear that we were going to remain in camp here to-morrow, affording an opportunity to prepare our specimens. Our bags were as follows:

Dr. Clendenin.

- 1 "White-top" Quail (Callipepla squamata).
- 1 Gambel's Quail (Lophortyx gambeli).
- 11 "Prairie Dogs" (Cynomys arizonensis).
- 1 Colorado Raven (Corvus cryptoleucus).
- 14 Dr. Meane.
- 3 "White-top" Quail (Callipepla squamata).
- 6 "Prairie Dogs" (Cynomys arizonensis).
- 1 Colorado Raven (Corvus cryptoleucus).
- 1 Burrowing Owl (Speotyto hypogaea umicula).
- 25 Total.

April 10<sup>th</sup>.

In camp at Frick's ranch. Skinned Prairie Dogs and birds all day. The White-necked Raven (Corvus cryptoleucus) is very abundant at the ranch, and extremely tame. Several were shot by the men; and I gave Me Nally my shot-gun to procure me a specimen, which he did immediately. It was very hot in camp. An ambulance with some officers and ladies came in from Fort Grant on the way to Wilcox to the Railroad depot about six or eight miles from here. Me Nally shot a lot of rabbits and reported nothing else in the vicinity of our camp.

April 11<sup>th</sup>

To-day eight troops of the 3<sup>rd</sup> Cavalry will encamp at Fricks Ranch, and join us at Bowie Station to-morrow, together with one troop from Fort Bowie making eleven troops, one troop being stationed at Jefferson Barracks, Mo. We marched 22 miles to Bowie Station. The country was rolling, covered with excellent curled gramma and black gramma grass, with a few low mesquites and occasional patches of sagbrush, in which a couple of Sealed Quails (*Callipepla squamata*) were seen. Then we descended to the railroad where it crossed the Chiricahua Range at a point named Railroad Pass, separating a spur of the Chiricahuas, the Santa Bonita, from the main range to the south, where a prominent peak crowned by two heads called the "Joe Cabezas" forms a prominent landmark. At Railroad Pass we first found Cassin's Finch (*Peucaea cassini*). It was singing very sweetly among scrambling *Quercus neglecta*'s on a small scale, from the top of a bush near a dry watercourse. The only other birds of special interest were Colorado Ravens (*Corvus cryptoleucus*) which was abundant all the way to Bowie Station. No trees were seen on to-day's march, and scarcely any shrubbery save along a dry bed of a stream between ~~Pass~~ Railroad Pass and Bowie Station. At Bowie were a number of Burrowing Owls which infested the neighborhood of the slaughter-house, and were heard sounding their remarkable notes during the night.

Lieut. Col. Glendin had come down here from Grant, where he was on Court Martial duty, to see his Regiment off, and he entertained his son (Dr. L.) and myself handsomely, having fixed himself cozily in the D.M. Agent's quarters, but he came down and slept in our tent that night. We spent the evening agreeably telling stories; and I was

the butt for a good deal of good-natured satire on the subject of my apparel, having been "jumped" on by the Colonel for not wearing my uniform. He (Col. Brackett)

April 12<sup>th</sup>

In camp at Bowie Station. "M" Troop of the 3<sup>rd</sup> came in from Fort Bowie ~~at~~ at 10 o'clock a.m., and the eight remaining troops arrived at three o'clock, having left Fort Grant on the 11<sup>th</sup>. My two Hospital Stewards (Werner and Hamacker) reported to me; but the two A.A. Surgeons did not arrive, having been unavoidably detained, Dr. Wierick by change in orders and Dr. Carter was subpoenaed by a civil court, as a witness.

My duties occupied much time but I made an opportunity to prepare the skins of a pair of Colorado Ravens, four "White-top" Quail, a Burrowing Owl and the new Cassin's Finch shot at Railroad Pass.

I here strewed away the remaining skins of the Prairie Dogs, Colorado Ravens, Greater Yellow-legs and several other things of value for lack of time to make up the specimens. I repacked the whole of my baggage, and prepared for the trip to Deming. I regarded it as a great misfortune that I had no Medical Officer to assist me, as I had expected, and subsequent events confirmed me in this opinion.

Besides Burrowing Owls, Blackbirds, and a few Sparrows, Shrikes, etc. nothing of special interest was seen about our hot, dusty camp.

A good bath in my tent was enjoyed. I regretted not having had time to visit Fort Bowie, distant only 14 miles, in a valley in the foothills of the Chiricahuas, marked by a high peak called Helen's Peak. The foot hills nearest us were probably seven or eight miles away, wooded with *seris*, and attractive in appearance from this distance. Towards





There were a number of large snakes called by the teamsters "Bull Snakes" in our camp. I skinned one that measured 62 inches in length. It was caught by Mr. Tally, blinded my tent, and brought to me alive. I allowed it to encircle my boot-leg with several turns of its lithe body, and was astonished at its constricting force. Our camp on the summit of the Pass was exceedingly picturesque and pleasing, viewed from some neighboring hills, which we climbed in search of specimens. Nothing of special interest was found in the few scattered cedars, which, by the way are the only trees encountered by us, except those seen upon distant mountains, between Tres Alamos (with the <sup>exception of the</sup> single remaining oak at the "Three Oaks" and a few cultivated cottonwoods at Frick's Ranch) and Luning; and, returning from Luning, trees were not seen (except evergreens on distant mountains) until we reached Saguon Summit, Arizona. Mesquite, and tall Spanish daggers and soapweed were abundant in the Pass.

### April 15<sup>th</sup>.

Marched 23 miles to a water tank three miles east of Lordsburg, New Mexico. On the first mile or two, through the Pass, were greasewood, mesquite, yuccas and Spanish bayonets. In an area of very tall soapweeds, Scott's Oriole was doubtless breeding; but I did not then know where to look for the nest, which, however I subsequently discovered near Fort Lowell in Arizona. I shot one of these beautiful Orioles; but it got up and flew away when I dismounted to pick it up. A few Ravens of both species were found here. I shot one White-necked Raven (*Corvus cryptoleucus*) that flew overhead. It flew straight on 500 yards and then fell dead and was found and preserved. Our last camp

was on the summit of Stearns Pass, with a high hill with rocky precipitous sides on either <sup>hand</sup> side. At the foot of the Pass, a mile or two from last camp, we reached a wide valley, in the center of which is an enormous area of smooth, actually glistening, pale clay-colored soil, which looked like a lake at a distance. A wide margin along the edge of the valley many thousand acres in extent was covered with a rank growth of excellent grass, among the roots of which quantities of small univalve shells were seen and specimens preserved. In it were scattered pairs of Southern Shore Larks, evidently breeding, as shown by the condition of the abdomen of a female shot and preserved. The male flew and fluttered over the body of its dying mate, and was not frightened off until I was within a few feet of it, and then it fluttered and cried overhead. Upon the level center of this "alkali flat" as these districts are termed, not a vestige of vegetation exists. The smooth clay surface was finely multifissured, but so hard that our horse's hoofs scarcely left an imprint. The Railroad, for some unknown reason, here describes an arc of a circle; and we cut across it and so easily caught up with the column although we stopped on the way to eat our lunch. There was a strong wind behind us which made it easy for the animals. The wagons fairly sailed across, the mules scarcely pulling or pushing. We next crossed a series of ridges covered rather scantily with greasewood, where the burrows of the <sup>(*Spermophilus* *philosoma*)</sup> *Yuma Spermophile* were abundant, and the animals themselves often seen and heard. The town of Lordsburg is quite a pleasant little frontier village, infested by rowdies and Chinamen. Here we met Capt. Williams again. From Lordsburg to camp (3 miles) nothing of interest was seen. The only Mammals seen to-day



were ~~Hesperomys~~ *Spermophilus*, Southern Pocket Gophers, Desert and Northern Jackass Rabbits, Wood Rats and tracks of some species of Deer which we noted as "*Oreamnos* *macrotis*?" with a query.

Birds. - The only species seen were Sage Thrashers, Mockingbirds, Yellow-headed Tit, Cactus Wren, Rock Wren, Logger-headed Shrike (*var. eximiorides*), Western Grass Finch, Intermediate White-crowned Sparrow, Brewer's Sparrow, Black-throated Sparrow, Green-tailed Towhee, Western Meadow Lark, Scott's Oriole, Brewer's Sparrow-Blackbird, American Raven, White-necked Raven, Mexican Shore Lark, Texas Sapsucker, Red-tail Hawk (*B. calurus*), Mourning Dove, Sealed Quail and the Killdeer, the last near Lordsburg. The White-throated or sealed Quail near Stein's Pass. Brewer's Sparrow is here more abundant than hitherto; but it is ubiquitous.

Our camp was ill-chosen, and arrangements about watering badly fuddled up. The wind and dust very annoying.

### April 16<sup>th</sup>.

Marched to Separt, 17 miles (20 from Lordsburg). arriving early in the day, as we started at daylight. The first few miles was level, grassy plain, succeeded by a broad belt of sagebrush and other bushes. Then we ascended gradually the rest of the march; the country was nearly all the way, and carpeted with pretty flowers. Two small rattlesnakes were killed. The species is different from any I have seen in Arizona. They are invariably small (2 feet) and dark with few rattles. Mirages were seen to-day for the first. To the left of the trail, while ascending the hill, a lake appeared to lie, out of which the mountain peaks arose and assumed strange forms.

Mammals - Plenty of holes supposed by us to be Badger's burrows, were seen. Coyotes, Antelope, Wood Rat, Northern Jack Rabbit and Southern

Pocket Gophers were the only other mammals seen. The Birds seen were Sage Thrasher, Mockingbird, White-rumped Shrike, Intermediate White-crowned Sparrow, Western Chipping Sparrow, Western Grass Finch, Brewer's Sparrow, Black-throated Sparrow, Lark Bunting, Yellow-headed Blackbird, Western Meadow Lark, Brewer's Blackbird, American Raven, White-necked Raven, and Mourning Dove. <sup>Killdeer</sup> The White-necked Raven frequents the Railroad and is quite tame. Both species follow the command to pick up the food they drop.

### April 17<sup>th</sup>.

Marched to Laga, New Mexico, 20 miles. Rerille at 3.30 A.M. Reached camp at 11 o'clock, A.M. The country a sloping, grassy plain, with occasional soapwoods and <sup>but, distinct</sup> Spanish bayonets. Mountains as usual on all sides. Very few Birds were seen. Antelope signs everywhere abundant. Their abundant tracks show that they have been present in large bands. Deer tracks were also seen. Badger's burrows were numerous. Northern Jack Rabbits were seen. The only Birds seen were: Chestnut-collared Longspur, Western Grass Finch, Western Yellow-winged Sparrow, Clay-colored Sparrow, Brewer's Sparrow, Lark Bunting, Western Meadow Lark, Brewer's Blackbird, White-necked Raven, Mourning Dove and Killdeer Plover. The Clay-colored Sparrow (*Spizella pallida*) was taken and observed for the first time in my own experience.

### April 18<sup>th</sup>.

Rerille at 3.30 A.M. Left camp at 4.45 o'clock, and marched to camp one mile East of Deming, New Mexico, the terminus of my journey, arriving there at eleven o'clock, A.M. Distance 21 miles (20 to Deming). The route, as for several days past, lay through a wide ~~low~~ prairie valley with mountains on either

side. Some isolated peaks and mounds were passed at no great distance which were perfectly barren and desolate, although there was a little more vegetation - Spanish baretos, etc. - along their base. No shrubbery except stunted Mesquites; and most of the birds Passeres. A handsome male specimen of Cassin's Finch was shot. The singular, insect-like song of the Western Yellow-winged Sparrow was heard on all sides; but they were so hard to see in the long grass, and so hard to flush as they ran mouse-like through the grass, that none were taken, as we had little time to delay, being obliged to ride within sight of the column.

Numbers of Horned Lizards were found in the loose soil around Seming. Several were caught together, and some specimens prepared as skins.

Not far from Sage I flushed a Western Meadow Lark from its nest, which was built like the Eastern Sturnella magna's. The nest contained three eggs.

~~Which~~ <sup>which</sup> were perfectly fresh, and were preserved and transported safely home.

Above is a sectional view of the covered nest, built near some tufts of yellow poppies.

April 19<sup>th</sup>.

In camp at Seming. Windy and dusty.

April 20<sup>th</sup>

In camp at Seming. Went hunting in the vicinity of town with Dr. Glendenin. Seming is built in a sandy, dusty plain. The country around is barren and unproductive. There is scarcely any grass. Medium sized Mesquites and sagebrush the only shrubbery.

There are no trees in the town, which is as unattractive in the daytime as it is boisterous and licentious at night. It is, in short, quite typical of these wretched border towns. We found a pleasant

saloon, however, and procured some frozen custard, which was very refreshing after our dusty tramp in the high wind. After making some purchases, we returned to our tent, which we found everything covered with dust and one of the flaps having loosened and brushed a flock of fine dust over our bedding and baggage. With our tent banked up with dirt we found it close and disagreeable enough, while outside it was still worse. The only Mammals seen were Coyotes, ~~Fort Yuma~~ Spermophiles and Northern Jackass Hares, of which latter I procured a female specimen, having a singular deformity of the skull with accompanying distortion of the teeth.

The birds seen were: Mockingbird, Crissal Thrasher, Pileolated Warbler, White-rumped Shrike, Western Grass Finch, Intermediate White-crowned Sparrow, Brewer's Sparrow, Black-throated Sparrow, Green-tailed Towhee, Brewer's Blackbird, American Raven, White-necked Raven, Ash-throated Flycatcher, Sparrow Hawk and Turkey Buzzard.

The specimens preserved were: One Jack Rabbit, 2 crissal Thrashers, 1 Ash-throated Flycatcher, 1 Pileolated Warbler, 1 Green-tailed Towhee, 3 Brewer's Sparrows and 1 Black-throated Sparrow. Total, 10.

April 21<sup>st</sup>.

In camp at Seming all day. The Doctor and I had intended to drive over to old Fort Cuming, but a horrible dust-storm prevailed all day and night.

Unable to leave camp. Several tents were blown down, among them our mess tent. Those officers whose tents were down congregated in the domiciles of their more fortunate comrades. Our tent was packed all day; and everyone was good natured and jolly in spite of mishaps and discomforts. The light wagons had to be lariatied down to the ground. Skinned a Jack Rabbit, horned toad and nine birds.



April 22<sup>nd</sup>.

Still in camp at Denning, waiting for the arrival of the 11<sup>th</sup> Cavalry. In the morning we went hunting towards the Southern foothills. Walked all the way around the town of Denning. The town is built on the supposed underground course of the Minnesota River. A belt of mesquites marks its course. In the range north of Denning rises Look's Peak. Behind a smaller peak to the right, distant about 15 miles is old Fort Cimarron, garrisoned by a handful of soldiers, commanded by a Lieutenant.

The 10<sup>th</sup> Cavalry arrived at 3 o'clock P.M.

April 23<sup>rd</sup>.

The 3<sup>rd</sup> Cavalry left Denning en route for Texas at sunrise. I bade fare well to Mrs. Russell and the Captain, Dr. Clevinman and Troop "K" of the 3<sup>rd</sup>.

I'm camp all day with the 10<sup>th</sup> Cavalry. Weather a trifle less cold, dusty and disagreeable. Called with Capt. T. A. Baldwin upon Mrs. Capt. William at Denning, and met Mrs. Capt. Smithers there.

April 24<sup>th</sup>.

Marched from Denning to Sage, New Mexico, 21 miles (20 from Denning). The Chaplain, <sup>Major</sup> whom I invited to share my tent rode with me. "Gophers" (*Spermophilus <sup>spilosoma</sup> arcticus*) were seen about Denning. The only bird of special interest was a specimen of *Penelope ruficeps bowcardi* which I shot near Sage. The country a wide valley, with a few low mesquites just unfolding their leaves. Mountains on either hand, and good grass after the first six or eight miles. The day was calm and pleasant.

Around some corrals at Sage, built of bear grass (*Yucca*) with cedar posts, were a lot of Doves and Yellow-headed Blackbirds, which species we also saw at Denning. The Blackbirds' notes are unique.

and carrying <sup>up</sup> the car. <sup>more</sup> Barn Swallow (*Hirundo erythrogaster*). We rode through the principal streets of Denning. A number of ~~Yucca~~ *Spermophiles* were seen in the mesquite mounds.

April 25<sup>th</sup>.

As my orders were to ride with the Red Cross ambulance, between the column and wagon-train, I was deluged with dust, and had no opportunity for observation. A pair of the small dark-colored Rattlesnakes were lying at the entrance of their burrow, copulating, within a foot of the trail over which the whole twelve Troops had just passed. I shot both at once. The country is grassy, with bear grass, Spanish bayonet and a few *Lechland* cacti. I could see that this vegetation increased in abundance towards the foothills which were <sup>more</sup> <sup>more</sup> wooded with cedars, faint discernable in the distance. The mesquites were very distinct and numerous. Marshes with blue water shining through the grass and large lakes seemed to exist at a little distance; and the foothills assumed fantastic shapes owing to the low part of their bases being obscured. Below is shown the appearance.



A village of "Prairie Dogs" and Ants, was passed. The dogs were barking still although the entire column had just passed. I fired at two owls but did not kill either. Being obliged to ride with the ambulance, I could not stay behind to hunt them any longer. We marched to Separ, 20 miles.

April 26<sup>th</sup>, 1885.

Marched to Lordsburg, 20 miles.

A broad plain between foothills with higher mountains rising beyond. Towards the South were the Chiricahuas, covered with snow. The chants and trills of Cassin's Sparrow (*Peucaea cassinii*) enlivened the march; but I was compelled to ride with the column and could obtain none of them. At Lordsburg, a Woodhouse's Jay, the first seen since March, sailed over my ambulance, <sup>and alighted</sup> in camp, flying about among the tents, horses and soldiers in a dazed sort of way, over restless and betaking itself to flight. Evidently, it was crossing the plain from one mountain to another. It is the only one seen on our march, east of the Agua Fria.

April 27<sup>th</sup>.

Marched to Stein's Pass, 20 miles. After travelling a few miles, we crossed a low range of foothills, clothed with greasewood and a few arborescent cacti, some of which for the first time, going westward, contained nests of the Leucis Wren. *Junco* *Spermophiles* <sup>*opileosoma macrocephalus*</sup> were here abundant, and their hissing whistle was constantly heard as we were passing. A Pileolated Warbler (*Myiophobus pusillus pileolatus*) was seen here; and Mockingbirds were abundant. The Orioles that we saw here when going eastward were perhaps frightened out of the way by the passing column. A Cotton-tail (*Lepus sylvaticus arizonae*) was shot and preserved. Although small it was an adult male its testicles being largely developed. After crossing the range, a wide valley interposes between it and the range of hills in advance, of which Stein's Peak is the highest point, and situate just north of the Pass and S. P. Railroad. This wide valley has excellent grass, among the roots of which are a quantity of small mammal skulls of which specimens were collected.

In the centre of the valley is a large alkalai flat, bounded only by the horizon line to the north, and totally destitute of vegetation. It is smooth and level, but finely fissured, and so hard that a horse scarcely leaves an imprint in passing. This area is several miles wide. The earth is pale buff. In the grassy part of the valley are numerous Mexican Shore Larks, which are breeding, but whose nests I had no opportunity to search for. Mockingbirds and Sparrows of several species were abundant and singing; but my duties prevented me from hunting for specimens. I was glad to find time to preserve my rabbit.

April 28<sup>th</sup>.

Marched to San Simon, Arizona, 14 miles. After my tent was struck, I hunted about camp. Agaves (mescal), Spanish bayonet, bear grass and low mesquites, together with flowering annuals and good grass, constituted the salient floral features of the place. Mourning Doves were very abundant. A "White-top" Quail (*Callipepla squamata*) was crying harshly, uttering a single call-note. Then it flew, and alighted upon the top of a tall dry stalk of the mescal, and began calling a bi-syllabic note very like the common cry of the domestic Guinea-bird. Rabbits were very abundant in the Pass. A number of Cotton-tails (*Lepus sylvaticus arizonae*) were seen to enter burrows which I believe they excavate for themselves, as I also believe the Eastern Gray Rabbit (*Lepus sylvaticus sylvaticus*) does, although this is contrary to the generally received opinion of naturalists. *Junco* *Spermophiles* were abundant. Around the bold cliffs at Stein's Pass a pair of Golden Eagles, the only ones seen on the trip, were circling about; and it is quite probable that they breed there. Rock Wrens have young flying.



April 29<sup>th</sup>.

Marched 16 miles to Bowie Station, Arizona. Breakfasted early with Capt. J. A. Baldwin, and then walked back 2 miles towards Stearns Pass to a water hole where I had seen some Killdeer when marching, and thought I might find some birds of value to me, as that is the only water in the region, and is surrounded by long grass. On my way there I saw a Mexican Shore Lark (*Eremophila alpestris chrysolaema*) singing its love song upon the top of a bush! I found the shallow pool, now nearly dry, and found it a water course where birds were congregated in large numbers about the small quantity of water, which was strongly alkaline. The Killdeer were there also, and the pair taken and preserved. I returned to camp just in time to march with the Red Cross Ambulance according to order. Marched to Bowie Station and camped.

Many nests in mesquites were occasionally seen but there was no opportunity for examining them. Nests of the <sup>th</sup> Cactus Wren and Yellow-headed Tit were numerous, although there was scarcely any cactus for the former to build in. The greasewood was rank and regularly disposed in lines or rows in some places, like a cuscaw'patel. Large lizards were very abundant. By the way, small green lizards were often seen in the grass in New Mexico.

April 30<sup>th</sup>.

In camp at Bowie Station. We had muster of the whole regiment this morning, after which I got permission to go hunting, and left at eleven o'clock a.m. after dispatching my <sup>at the north end of the Chiricahua range,</sup> mountaineers, and walked over to the southern foothills, a distance of some half dozen miles. In a ravine of these foothills of the Chiricahua Mountains, which I included, were

many birds; but my supply of cartridges loaded with fine shot had been exhausted on the way to this spot, and I had to regret being unable to procure specimens of such birds as Costa's Hummingbird, Tico Tico, and several other desirable species.

The Gray Vireo (*C. vicinior*, Coues.) sang loud and sweet. They also have a loud call-note, and are rather shy. Scott's Oriole (*Icterus parisorum*) were numerous and doubtless had nests in the vicinity. Pileolated Warblers, Intermediate White-crowned Sparrows, Blandings (Green-tailed) and Canyon Towhees and Crissal Thrashers were also abundant. A Thrasher's nest found in an <sup>open</sup> arroyo near the foothills, contained 2 newly-hatched young and one egg; and young of the same species were on wing, as were also young Western Meadow-Larks. A mile from the foothills near a dry arroyo, I almost trod upon a sitting female Scaled Quail, that whirled off from her nest at great speed. The eggs, twelve in number, were but slightly incubated and were brought safely home to Fort Verde. The nest was in the centre of a tuft of grass; perfectly circular, lined with feathers of its own species, surrounded by pretty yellow poppies, and close beside a cactus (*Sarcocolla*) bearing handsome red flowers. The parent

did not return during the quarter of an hour that I waited for her. Then I followed her and got within a few feet of her, but she ran so swiftly and hid so deftly that she got nearly out of range and then flew: I missed.

Giant Cactus Wrens were breeding plentifully. Some young were on wing. One set of 3 fresh eggs was taken with the parent. Other nests were not yet completed. The nests were lined with feathers, many of both species of Quail (*Lophortyx gambeli* and *Callipepla squamata*), Scott's Oriole, Road-runner and Mourning Dove.





May 2<sup>nd</sup>.

Marched to Dagoon Summit, 20 miles. A level grassy plain or prairie with an alkalai flat destitute of vegetation and several miles wide. Then we reached the foothills, where a herd of Antelope were fired upon by the soldiers, but none killed. The last mile was all up a gentle slope to the summit of the pass, where a herd of Mule Deer were seen in the cedar-clad foothills to the south. The range of mountains south of us is well wooded above a certain elevation, probably with pines, while the foothills are more or less clothed with cedars. It began to rain at dark and continued hard until midnight. I had the Steward <sup>Max</sup> (Werner) make down his bed in my tent as he had neither tent nor canvas; and the O. Ambulance was filled with traps belonging to Les Givison. Near Dagoon Summit I found a dead Long-eared Owl. There are a few new flowers here. The few Burrowing Owls seen were the only things of any great interest seen en route. They were very shy. Would fly away from their burrows when I approached, flying several times and finally returning to the burrow whence they started and enter it. Their flight is low, alternately fluttering and soaring. They utter a call-note when flushed. (Fort Yuma?) Spermophiles had formed a large colony west of the alkalai desert.

May 3<sup>rd</sup>.

Meadore A.

Arose early and breakfasted with Captain Baldwin and then started out on foot northward, and soon found a village of Prairie Dogs and Owls among the rolling grassy slopes, and with much trouble succeeded in killing a handsome male. A Cotton-tail (Lepus sylvaticus arizonae) in the village sat in the entrance of its burrow too. I suspect that


they dig burrows for themselves; and I know that they live in them.

I rode with Captain Baldwin a few miles then followed an arroyo, along which were some Walnut and other trees and shrubbery. Birds were abundant. Mockingbirds were numerous all the way. I climbed to the crest of Cassin's Kingbird, when the Thrush made a great outcry overhead. A Mockler, from the top of a mesquite <sup>on</sup> the bank, imitated their distressed cries perfectly. Herissal Thrashers were very abundant there; but Palyer's Thrasher was not seen until I reached Benson.

Two nests of Cassin's Kingbird (Tyrannus vociferans) were found. The first examined contained four fresh eggs, but I lost my foothold when nearly to the bottom of the tree, and broke all of the eggs. The second nest contained a single egg. Both nests were built in Walnuts. Pipilo fuscus mesoleucus. A nest of the Canyon Towhee was found, containing four young. It was built in a mesquite bush three feet from the ground. The nest was composed of grass and weed-stalks.

A 2<sup>nd</sup> nest contained two (?) young and an added egg, which latter was blown easily and preserved. It was built upon a grape-vine six feet from the ground, and in structure was similar to the first. A young bird of the year was shot. It flew well. Was afterwards lost out of my pocket.

Tamias saxatilis. - The loud chattering of flocks of White-throated Swift attracted my attention. I got on the highest ground, concealed myself beneath some greasewood bushes, and soon had a good shot, killing a fine male. When I skinned it, the testicles were found to be enormous, measuring 9 x 20 mm. Hooded and Scott's Orioles were singing. Hummingbirds were numerous, but those identified were all of one species - Prochelidon alexandri. Gambel's Quail was abundant; but I only saw one small flock of

Scaled Quail, one of which I shot. Their great speed in running and strength of flight were again noticed. Paysonia sayi had scooped out a ~~nest~~ hole, or found one where a stone had been dislodged, in the side of a clay bank having a narrow slit of an entrance like this  showing only a few straws sticking out of the orifice. This species was to-day more abundant than elsewhere on the route.

Pipilo chlorurus was abundant, and probably breeding. One flock of Audubon's Warblers was seen.

About four miles west of Dagoon Summit a single Gila Woodpecker (Centurus uropygialis) was seen. It was calling lustily and pounding one telegraph-pole after another, until it got tired of keeping ahead of me and flew off loose-side and lit in a bush. The only one seen today.

I followed the Railroad and cut several birds which shortened my march by several miles. Major Mc Lellan took a wrong road and made the march longer by a dozen miles. Accordingly I got to Benson several hours ahead of the troops, and hunted as much as I liked along the way.

Benson is a mining town, less in size than Globe City. They were pouring silver to-night at the smelter.

The bullion was piled up in bars, <sup>to the height of</sup> six feet high. The Rio San Pedro flows through the town. A Roadrunner and Palmer's Thrasher were the only birds of interest seen along it. Several very handsome Pima Indian girls visited our camp. They made faces at all of the men who attempted to converse with them. Their hands, feet arms and legs are handsomely formed. They were rather short in stature, and broad and muscular.

The colored Soldiers went over to town and hooted and sang all night. Distance marched, 20 miles.

May 4th.

Marched to Mountain Spring 18 miles. The first few miles from Benson, where we left the Railroad, was in the valley of the San Pedro, thence up upon the plateau. When ascending, a number of birds were seen but nothing new. The slope is clothed with Mesquite (Prosopis glandulosa Torr.) and other Yucca in which Gambel's Quail, Northern Jackass Heads (Lepus texianus Waterhouse) and several species of birds were <sup>plentiful</sup> seen.

On the rolling plateau, broken by deep gulleys, was no shrubbery, but good grass, in which were large mounds of the Synodontia spectabilis, upon which Mexican Shore Larks habitually sit to sing their love songs, and, probably, also to sing catch ants. There I heard Coturniculus passerinus perpallidus singing its insect-like ditty. After crossing the

Railroad we came to orchard-like areas of mesquites, many of them 25 to 30 feet high, in which were found several nearly completed nests of Tyrannus verticalis. A Roadrunner was found in a mesquite 4 1/2 feet above the ground. It contained two fresh eggs. An other nest was found in a mesquite 15 feet from the ground. A third was six feet from the ground. All of them looked about like average nests of the Green Heron, with the addition of a little grass stems of plants and cow manure for lining. Near Mountain Spring I secured 5 nearly fresh eggs of the Mockingbird from a nest in a box-elder tree. At Mountain Spring a clutch of 2 eggs of Phainopepla nitens was taken from a walnut tree. The male bird was sitting on the nest when it was discovered.

A large flock of Turkey Buzzards roosts at Mountain Spring where they were seen going to roost in the large cottonwoods. At dusk I shot a bat, when they all rose and came skimming over the cottonwood-tops in the twilight with weird effect, their wings beating.



the air with a humming sound like a swarm of flies. White-winged Doves (*Macopelia leucoptera*) were cooing mournfully in every cottonwood, and numbers drank at evening in the stream. Their evening draught was drunk and they retired to roost for the night long before the Mourning Doves retired, cooing occasionally until dusk, after which they were quiet, while yet the Mourning Doves were whistling through the air in large numbers above the swampy pool at which hundreds were still drinking, within a few yards of our tents. They roost in the cottonwoods, willows and mesquites at night.

A new bird (*Pipraea aestiva cooperi*) was found on the stream a few miles from Mountain Spring, in some cottonwoods. Numbers of the young of the year Yellow-headed Tits and Cactus Wrens were seen flying. *Macopelia leucoptera*. The beautiful White-winged Dove was made a special object of search on this trip, not, excepting a single one seen at Fort Verde last summer - one dove seen until to-day (See note above). As I sat at dinner with the Captain, beneath the spreading arms of a huge cottonwood, the Capt. spoke of some red birds that he had noticed in the cottonwoods about our camp before I arrived. I glanced up into the tree and saw a White-winged Dove settle in the treetop above us, and begin its <sup>peculiar</sup> mournful cooing. Dozens of them were seen before we concluded the meal, after which I took up my gun and quickly had three of the beautiful birds at my feet, admiring their beautiful plumage. When courting in the <sup>branches</sup> ~~trees~~ they lift up their tails with a brandishing movement. They are quite gentle, preferring to attempt concealment in the foliage to flight; and its appearance is peculiarly gentle and neat and beautiful.

Between the point where our trail crosses the

Railroad at Mountain Spring I picked up a Box Turtle (*Serrapene*) <sup>which I thought</sup> ~~which I thought~~ some brutal soldier had crushed with a carbine butt. Notwithstanding this imperfection I skinned and preserved the specimen. I was told that they are fond of staying between the ties along the Railroad, and my informant was of the opinion that this is because they are attracted by the immense sound produced by the rubbing metal when trains are passing even when at a distance of several miles; but the more probable reason for their occurrence along the track is the obstruction to travel which the latter offers, the track doubtless proving an effectual barrier to them and causing them to seek to pass beneath it, ~~under~~ <sup>between</sup> the wooden ties. This is the only one seen on the trip. At Mojave I saw a much larger <sup>terrestrial</sup> turtle, probably of a different species several specimens of which were in the possession of Dr. Ord, Post Surgeon. A very large Slender Legged lizard was shot near Mountain Spring. When shot its tail appeared to be bright green, but when picked up it was dull in color without any green. Do they change colors instantaneously?

May 5<sup>th</sup>.

Marched 18 miles to Fort Lowell, A.T. I arose and breakfasted early, and then set out to explore the <sup>branch</sup> ~~little~~ stream at Mountain Spring which I had not hitherto had an opportunity of doing. As soon as my things were packed I started up the stream, among the cottonwoods, box elders, walnut and ash. The aspect of the country in all this region, especially that here, along the stream beyond, where the Cooper's Lancer was later, and, in short, that of the last in fact yesterday's march, has changed much since we passed there before.

*(Prosopis glandulosa Torrey)*

The leaves on the <sup>(Populus fremontii Watson)</sup> mesquite and other trees, save the cottonwoods, which were then in leaf, lend an Syrian charm to the country, covering up much that before was bare and uninviting. In the belt of timber along the stream are grape-vines growing upon the trees. The cottonwoods are enormous, but none so large as that on the *Agua Fria* which measured

34 feet in girth four feet above the ground. White-winged Doves were courting in the cottonwoods, spreading their handsome tails or jutting them upward as the sat beside their mate, cooing loudly. Several nests of *Vireo pusillus* were found. One was carried to camp, but the four eggs which it contained were too far incubated for preservation. Perched upon a dry willow top was a beautiful new Hummingbird

(*Coereba latirostris*) which was fortunately secured. A nest of *Trochilus alexandri* with the parent bird was taken near by, from a <sup>drooping, candel</sup> grape-vine. Vermilion Flycatchers were fluttering upward toward the zenith, showing their rich plumage to advantage. The Chats whistled and mocked each other, and displayed their usual accomplishments of voice and acrobatic feats.

Gila and Lewis's Woodpeckers, Malherbe's Flickers and Turkey Buzzards were very abundant, as were many other birds. I was obliged to hurry away long before I had investigated the spot to my satisfaction.

On leaving the place, some fine forests of Giant Cacti were passed upon the conical hills bordering the pass, mixed with beehive cacti, <sup>(Cylindropuntia wislizeni)</sup> in fruit, yellow-flowering prickly pear (*Opuntia*) and red-flowering arborescent cacti, and "corral-wood" (*Houquiera splendens*) bearing red flowers also. Lactus Worms and their young families were numerous. I saw the opening circle of birds upon the summit of the <sup>schuarae for the</sup> first time. The green-barked <sup>kinsonia microphylla Torr.</sup> acacia or Palo Verde (*Par-*) is an exquisitely beautiful small spreading tree,

now laden with snow blossoms. A Gila Monster (*Heloderma suspectum* Leconte) was seen on the trail and quickly captured. I set my gun upon its back and picked it up. It made a loud blowing noise, and emitted a pungent odor, which I can only compare to that of a wasp in quality, but wholly different, peculiar and disgusting. I punctured its medulla with a pen-knife and carried it to camp in my saddle pocket. In the evening I stuffed it in Dr. Hopkins' quarters. This is the first I ever saw. The markings fade when the skin dries. They are handsome when living. The black has a purple lustre, and the light marks are bright reddish-orange. They dart out their tongues like serpents and attempt to bite. Their skins are thick and tough, and closely adherent to the flesh, being very difficult to remove. The skeleton is exceedingly strong. They can easily be overtaken when attempting to escape by running.

"White-tail" Quails were numerous. I shot two rising near together, on the wing, but one could not be recovered. Then I shot a pair at once on the ground. Attracted by their loud cries I saw two males fighting fiercely for a female. I shot two of them with one barrel upon the ground, and the remaining one on the wing, as she varied with the other. On passing a place where we saw large St. Lucas Cardinals when going I also found a pair to-day, and shot the female on the wing, but did not find time to skin it, and only preserved the skull. A number of White-winged Doves were seen about this place. There are some Mexicans' ranches near the place, and doublet water, although I did not visit them. A nest of *Livocorys californianus* (Road-Runner)



was built in a large round-jointed, red-flowered cactus, beside an old nest of the same species, which contained five young covered with lead-colored quills like those of young Cuckoos.

A Scott's Oriole's nest was found suspended beneath the dependent leaves of a large and tall soapweed <sup>(Yucca)</sup> fruit of the white spin threads of this plant, lined with cottony hair—an exquisite structure. The parent was shot as she flew from the nest, which contained four eggs, much incubated.

One fresh egg of *Buteo borealis calurus* (Red-tail) was taken from a nest in a mesquite-tree, 15 feet from the ground, built strong of sticks, lined with some grass and weed-stalks. Concavity, considerable. Egg, blue. We camped on the Rillito Creek a mile above Fort Lowell. Spent the evening with Dr. and Mrs. Hopkins, looking at specimens of birds which the Dr. had taken during my absence, and talking garrison gossip. Robins and Mockingbirds sang all night, and the purring of the stream close beside my tent sounded pleasantly.

May 6<sup>th</sup>.

In camp at Rillito Creek near Fort Lowell. Rode to Tucson with Capt. Baldwin and Dr. Hopkins in the morning. In the little park through which flows the Santa Cruz River in the midst of town were some Lewis Woodpeckers.

Small fruits were abundant and cheap in Tucson. Spent the afternoon in my tent writing official papers and skinning birds. Cooper's Tanagers were quite numerous and frequently alighted upon some dry twig or cottonwood top near the water. Dr. Hopkins tells me that they are breeding in the Past of Fort Lowell. He showed me a beautiful male that he shot at the Mission of San Xavier, 10

mile south of Tucson. It was a pretty sight to see them gliding along the edge of the Rillito in front of my tent, while I sat within skinning birds and making out my official papers.

May 7<sup>th</sup>.

Marched 26 miles to Rillito Station. After packing my things, I made a hasty examination of the Rillito in the vicinity of our camp. Large cottonwoods with an abundance of <sup>(*Salix nigra* and *S. occidentalis longipes*)</sup> willows, a few box elders, and ash, were the principal trees. They were stunted with gnarled trunks in full bloom and fragrant. Beneath were the beautiful and fragrant *Saturas* and Elders also in bloom. The bed of the stream is broad and sandy, the water channel narrow and tortuous. The sand was hard and white. The Cooper's Tanagers (*Pyranga aestiva cooperi*) utter a spasmodic, impulsive "Ke-dek, Ke-dek" reminding me of some of the Flycatchers. Dr. Cooper says that this call is the language of the Navajo Indians means "Come here & come here". They were flying in pairs I shot a pair at the same shot in a willow. They seem to prefer them to cottonwoods. They like to alight in a low situation on ~~cottonwoods~~ a dead branch, as does *Pyranga* <sup>*erythronelas*</sup> ~~*erythra*. A couple of females were taken in addition to the pair, but one escaped, having been slightly wounded.~~

Colonel Strickson sent for me, and I expected some unfriendly demonstration; but he shook me warmly by the hand and offered to serve me when he reached headquarters and to attempt to send transportation for my effects down from Whipple. His order compelling me to ride with the wagon train for several hundred miles was evidently a source of uneasiness to him.

Road Runners are numerous about Lowell. The

The first specimen I shot after leaving the Post was a gorgeous male Saint Lucas cardinal. The female was shy and escaped.

A nest of *Geothlypis trichas* *americae* *hendrei* was found, containing three eggs perfectly fresh, built in a grape-vine, overhanging a small tree, beside Rillito Creek. One was accidentally crushed after reaching Fort Verde in safety.

Ash-throated Flycatchers were abundant, and I shot several hoping to find *Myiarchus cooperi* which is said to breed abundantly about Lowell; but I saw none. A clutch of Ash-throated Flycatcher eggs were found in an old mesquite stump; and both old birds shot. After leaving the Rillito a Mexican bee farm was passed and around an other garden were the largest mesquites I have seen in Arizona, unless some of those near Nogales. A Malherbe's Flicker was shot.

On the acequia near Tucson I shot a Duck Hawk (*Falco peregrinus naevius*), and found *Phainopepla nitens*, Yellow-headed Vireo, Lucy's Warbler, and many other birds exceedingly abundant among the tall mesquites. A nest containing five eggs of the White-rumped Shrike was taken and White-winged Doves were found in the mesquite, one of which I shot. A family of Texan Cardinals (*Peperuloxia sinuata*) was found near Rillito Station and an adult female secured. The male uttered a loud note of two syllables, but was too shy to be secured. A young one was shot on the wing but fell in a large wood-pile near the Railroad and could not be got at. The district traversed to day is a splendid collecting ground.

The Texan Cardinal was also seen near camp at Lowell this morning. An enormous Diamond Rattlesnake was killed. A Long-eared Prairie Fox (*Vulpes macrotis*) was killed beside the railroad and looked fixedly at me as I passed by.

May 8<sup>th</sup>.

Marched 15 miles to Red Rock. The country, level, with greasewood, sagebrush, mesquite and giant cacti. The smaller cacti were abundant. A nest of the Black-capped Gnatcatcher (*Polioptila melanura*) was found in the fork of a greasewood and the eggs (5) and female parent (No. 3994) secured with nest. Families of Bendire and Palmer's Thrashers were everywhere, seen, as were those of the Cactus Wren, Black-capped Gnatcatcher and Yellow-headed Tit.

The Mexican Hare (*Lepus <sup>alleni</sup> <sup>mearnsi</sup> callositarsis*) was more abundant than I ever saw it elsewhere on the march.

As many as six were seen running together, and I killed two adults at one shot. I brought two of the finest specimens in to camp on my saddle (♂ and ♀ ad.), but only found time to skin the male and kept the skull of the female. A

number of these Hares were shot both young and old. I regretted not having time to skin more of them. I gave some of them to a soldier, who promised to keep the skulls for me but neglected to do so. When running they leap high in front instead of kicking up behind and are very much larger than *Lepus texianus* <sup>Woodhouse</sup>, while their colors serve at once to distinguish them at any distance.

Many of them are very shy, running long before you can get within rifle range, while others are as tame as the common Jack. The soldier killed dozens of them on the march.

When about 5 miles from Red Rock, I saw a very large nest in an enormous giant cactus, and upon it a bird. Having seen a number of these nests in cacti, I was anxious to discover the bird that builds them. Managing to get around behind the large branches of the cactus, I crept up to within a few yards of the nest, and shot the



old Hawk (Buteo borealis calurus). The color very fair in color, especially the old feathers of the tail; but a couple of new rectrices about half grown out were much darker. A colored soldier came up and I asked him if he thought there was any thing in the nest. He replied, "Don't know, sah, but I reckon dar is." and then I asked him if he would mind climbing up to the nest, intending the question as a piece of picasantry. The nest was an enormous pile of sticks in the axils of two huge arms of the giant Saguaro. The trunk was as large around as a hoghead; the nest 15 feet from the ground, and the Saguaro armed with long spines, as sharp as needles. To my astonishment he offered to climb up; but asked me to give him a boost, which I did heartily, enabling him to thrust his fingers into an owl's or woodpecker's hole and draw himself up to the lowest branch, in which was a hole which gave him a hold and enabled him to climb upon the lowest tier of branches and so reach the nest. We then drew down two downy young in succession, and afterwards an addled egg, not much larger than a hen's, considerably elongated and nearly equally rounded at the two ends. It could have been "blown" successfully, but chanced to be accidentally crushed before I reached camp. The young birds ate meat greedily and one of them lived several days before I found time to kill and skin it.

The female parent was carried along for several days, but I never found time to skin it. It was very pallid, probably due to fading, as two new tail-feathers were quite dark red, but I remember noting that the tail was plain and it may have been the Leafe Sanit Quercus Red-tail.

An Antelope (Fad.) was shot by a soldier in "Me" Troop.

May 9<sup>th</sup>

Marched 14 miles to Picacho Station, Arizona.

A number of immature specimens of Black-capied Gnatcatchers were shot, and the old ones were abundant. All of my notes of Plumbeous Gnatcatchers (Poliophtila plumbea) probably relate to females or young of this species, and I question the genuineness of the other species. As usual, the Leach's Wrens, Palmer's Bendire's Thrashers, Mockingbird, Gila Woodpeckers, Malherbe's Flicker, Carolina Dove, and Gambel's Quail are characteristic species.

The Sealed Quail (Callipepla squamata) was taken by Mr. Stephens near Picacho Station. Thinking that the sloping base of Picacho Peak would be a good locality for them I hunted faithfully in spite of the intense heat. In a pass behind the Peak I was informed there was a spring, and very probably these Quails would have been found there as well as many other rare and valuable species; but I had not time to reach the spot, and saw nothing of them any where west of the region between Mountain Spring and Fort Lowell where they are abundant.

At Fort Lowell, on April 6<sup>th</sup>, I heard a note (and so did Dr. Glendon) so much like that of Ortyx virginianus that we hunted the locality over, hoping to find Callipepla squamata. Since then I have seen plenty of Sealed Quails and believe that it has no such note and now believe that it was Ortyx graysoni. <sup>[It was Myiarchus cinerascens cooperi (E.A.M.)]</sup> On the rocky slope at the foot of Picacho Peak, were some Texas Nighthawks (Chordeiles nocturnus texensis), a specimen of which was secured. White-winged Doves cooed mournfully and a specimen was shot upon the top of a saguaro where it sat and sounded its sad notes in the midst of a wreath of white flowers. A beautiful growth of blooming Palo-verde or green-barked acacia

At the base of  
surrounding this pinnacle of rock, upon the walls  
of which the Echinocactus wislizeni stand boldly,  
out, each "cushion" crowned with a circle of yellow  
fruitage. On the slope below are the Sotuharas  
(Cereus giganteus) and white, deciduous cacti (Opuntia  
Bigelovii), together with smaller tree cacti and prickly  
pears. Here were dozens of Northern Jackass Hares,  
showing an evident choice of residence in favor  
of the hill slopes, while Lepus callosus callosus  
(I believe the two species are specifically distinct!)  
may be seen upon the broad desert plain around  
in equal abundance, but not seen at all in the  
hill-slopes. It is no unusual sight, however, to  
see both species running at once upon the plain.  
They do not associate together, however. Again  
the soldiers brought in dozens of them, but I  
neglected to secure the skulls, thinking I would  
have plenty of opportunities later, which, however,  
I never availed myself of.

Leaving Picacho Peak with reluctance, without seeing  
the alleged spring, I pursued my way to camp,  
much regretting the necessity that forced me to  
pass through this interesting region so rapidly  
as to permit only a cursory examination of its  
numerous but hidden treasures in both Zoology  
and Botany. While in camp at Picacho Station  
I persuaded Dr. Buzzard, the Regimental Veterinary  
Surgeon to chop down some of the inhabited  
Sotuharas and try to secure some owls and young  
Woodpeckers. The only one chopped down contained  
a nest of the Mexican Screech Owl and one of  
Malherbe's Flicker. There were four (4) young owls  
(Scops asio trichopsis) in the nest and the old  
one was also captured, but escaped before I saw her.  
I skinned one of the Owls, and kept the others  
alive in my trunk until after I reached Verde.

A young Malherbe's Flicker (No 4008 ♀ juv.) was also  
preserved. This was the first young of the year, seen  
and was fully feathered although the quills were  
not grown out. The Chila Woodpecker appears to rear  
its young later in the season. They were heard in  
their nests in Sotuharas all the way from Mountain  
Spring to Bumble Bee, but none were seen on  
wing, and, as none of the Giant Cacti were cut  
down for the purpose of securing them, none were  
taken in first plumage. Many young Flickers  
were seen on wing from this place to Big Bug when  
I saw and shot the last (Malherbe's) Flicker.  
A strict search for Leconte's Thrasher has failed to discover any.

May 10<sup>th</sup>.

Marched 19 miles to Casa Grande, Arizona.

Several immature Bendish Thrashers have been shot,  
when at a little distance, supposing they might be  
Leconte's Thrashers, but none were seen, although  
some were seen upon mesquite trees at a distance  
which were suspected of being Harporhynchus rufescens  
Lecontei, but were too shy to be positively identified.  
Specimens of Colaptes auratus were shot. One in  
an Opuntia Bigelovii near the Sotuhara in which was  
its nest. In some large spreading mesquite  
forming a compact grove, and close to some  
tall Sotuharas were a family of Mexican Screech  
Owls (Scops asio trichopsis), sitting separate upon  
the branches, drawn up to their full height and  
blinking and snapping their bills. They were just  
from the nest, but too strong on wing to be  
captured, so I shot a couple and made up the skins.

In another large spreading mesquite tree  
I saw a Ferruginous Parula Owl (Glaucoedon  
ferrugineus) flitting nimbly from branch to branch  
and shot it. It was an adult ♀ in full breeding plumage.



and the list I have ever seen. The Saguaro are all in bloom, and beautiful. The Gnatcatchers, Mockers, Leconte's Wren, Black-throated and Brewer's Sparrows, Ash-throated Flycatchers, Green-tailed Towhee, Lark Finch, Dwarf Cowbird, Raven, Texas Nighthawk, Texas Subcuckoo, Hummingbird (Black-chinned?), Gila Woodpecker, Malherbe's Flicker, Mexican Screech Owl, Burrowing Owl, Ferruginous Pigeon Owl, Sparrow Hawk, Western Red-tail, Mourning Dove, White-winged Dove, and Gambel's Quail, were the principal birds seen. A large *Palaemon* was taken. It tried to bite and a strong odor, no doubt.

May 11<sup>th</sup>.

Marched 26 miles to Maricopa, over a level country broken by dark arroyos in places. A short distance from Maricopa, I saw at a little distance what appeared to be some white rags on a mesquite bush, but rode carelessly up to within a few yards of them, when two beautiful Little White Egrets (*Ardea candidissima*) flew away before I could load my gun. I succeeded in shooting one after they <sup>had</sup> alighted, upon the wing, at very long range, and pursued the other one for several hours. It made a very conspicuous object, and could be seen at a distance of several miles. It flew somewhat in the direction in which I was going, as I could see by the <sup>colored</sup> dust from the command. At length I gave up the chase, having arrived in a bit of magnificent mesquite timber, covered with <sup>the</sup> parasitic mistletoe, and resounding with the notes of birds. *Phainopepla nitens* was abundant. This is the supposed underground course of the Santa Cruz River. I followed it nearly to Maricopa. Soon after, I shot a beautiful specimen of the Olive-sided Flycatcher (*Contopus borealis*). Several Juncos, Warblers - Macgillivray's & Pileolated - were swarming in the mesquites. When near Sweet Water, I shot a young one of the year Leconte's Thrasher, and near the same place shot a pair, and positively identified and secured their nest

and three fresh eggs. The female was shot from the nest, No. 4, 112, 4, 010 & 1. They were observed in the bush. I then examined the nest and afterwards concealed myself under a neighboring mesquite in a position that was scarcely supportable on account of the burning heat of the <sup>midday</sup> sun. The sharp "whit" of the female kept me apprised of her whereabouts, and, at length, when I was almost goaded, she flew to the mesquite and almost immediately took her place upon her nest. A chirping call from me quickly brought her to the top of the bush, where I shot her. With the male the case was different. It required a chase of an hour to secure him. He would certainly have escaped were it not for his persistency in returning to ~~from~~ the nest as often as lost sight of. His flight was often low among the bushes and impossible to follow, but when soaring upward into a bush was usually detected. Its sharply reiterated "whit" or "quit" also served to keep track of it. At length a long wing-shot broke its way, and then I had a chase upon the ground, shooting at it as I ran. Its dexterity in running and hiding among the scattered greasewoods was admirable, but I at length took it, and was compelled to lie down upon the scorching sand completely exhausted, with every artery at its greatest tension and beating hard. I packed my specimens as soon as able, and resumed the saddle. The first Wood Pewees were seen to-day - *Contopus richardsoni*. White-winged Doves were numerous. A specimen was taken in the supposed bed of the Santa Cruz. In the grove of large mesquites six miles from Maricopa were many Louisiana Tanagers (*Pyrocephalus ludovicianus*) whose gorgeous hues of red yellow and black glared in and out of the mesquite forest, in which numbers of White-winged Doves were mourning. A family of Maricopa Indians were encamped beneath the

falls, and were cooking their supper when I passed by. A few Thomomys leucurus were ~~seen~~ seen between Casa Grande and Sweet Water. Fort Yuma Spermophiles (Spermophilus tereticaudus) were seen at intervals, their existence being patent to a casual traveller more by the presence of their burrows and their soft whistle whose source he will be apt to look for in vain. The three species of Hares (Lepus sylvaticus arizonae, callosus callosus et callosus texianus) were represented, and these, together with one or two Canis (Canis latrans) were the only mammals seen. Western Lark Finches, Intermediate White-crowned Sparrows, Foxglove Sparrow, Black-throated Sparrow, Green-tailed Towhee, Lark Finch, Cowbird (Quail), Raven, Ash-throated Flycatcher, Olive-sided Flycatcher, Western Wood Pewee, Poor-will, Texas Sapsucker, Gila Woodpecker, Malheur's Flicker, Road Runner, Sparrow Hawk, Cooper's Hawk, Western Red-tail, Turkey Buzzard, Mourning, and White-winged Doves, Gambel's Quail, Snowy Plover, Mockingbird, Bendire's Palmer's and Leconte's Thrashers, Black Crested Flycatcher, Black-capped Gnatcatcher, Yellow-headed Tit, Cactus Wren, Margillivray's, and Pileolated Warblers, White-rumped Shrike, Western Tanager and the House Finch, were the birds seen.

May 12<sup>th</sup>

Marched 15 miles to Gila Indian Agency on the Gila River. Several Leconte's Thrashers were seen, and heard singing; but I did not succeed in shooting any of them or discover their nest. They sat on the mesquite of which there were but few along some dry arroyos. ~~Once~~ Once I shot a Shrike in a dense mesquite, mistaking it for the Leconte's Thrasher that flew away when I fired. A Shrike's nest containing five eggs was found in a mesquite, and secured. A <sup>Prairie</sup> ~~Gray~~ <sup>Wolf</sup> (Lupinus latrans) ran up towards me and stopped to look at me from

behind a bush, when I shot it (No. 1938 <sup>ad.</sup>) ~~and~~ from my horse, with a load of buckshot. It ran into a little way before it died. I followed it and came upon it lying dead upon the sand. It was covered with vermin. The skin and skull were preserved.

A Mexican Goshawk (Asturina nitida plagiata) was seen, but could not be closely approached.

Young Gila Woodpeckers were seen within the Casa Grande that were hatched. After riding about 8 miles, I turned to the right and rode down to a broad marsh, since the Gila River, which we had seen when we passed over this portion of the route before, but did not deem it advisable to go out of our way to examine, on account of the extreme heat and the condition of our horses; but now both "lying" and myself were at our best, and we returned to "take in the marsh." When I reached the place, much that appeared at a distance like water was only mud, covered with alkali; but there were number of pools, surrounded by cat-tails and tules, fifteen feet high, and so dense as to be impenetrable. Spotted Sand Pipers (Tringoides macularius) and Killdeer (Expedus macularius) were quite plentiful; and there were hundreds of Red-winged Blackbirds (Aythya platyris) whose piping notes made the place seem like one of our Eastern marshes. I shot a male as a souvenir of the place, and then searched carefully for more, but the marsh was so densely grown with cat-tails and tules and so treacherously boggy that I could not make much mark on horseback, and, when on foot, was constantly in fear of losing myself and not being able to find my horse. A Sparrow was often seen, which I failed either to identify or shoot. A small dark bird resembling a Rail as ~~long~~ as I could make out in the tall growth, was seen and heard, but could not be secured.



In a ~~large~~ lagoon was a large number of ~~Wading~~ Wading Wading Wading. So a few were seen, etc. running along the middle bank. The nearest was seen to get very close to me. All were in full breeding plumage with black throats. They were exceedingly beautiful and graceful when swimming, and I was so much absorbed in watching them, that I forgot my main business and the whole flock to escape. They rose suddenly with a sharp call-note, and sailed across the marsh until they were out of view.

I followed the main course of the stream for several miles and noticed that it was filled with small fish and frogs. A tremendous storm had been brewing all the morning. When it broke, the rain descended in sheets, steadily soaking to parched earth and filling the dry arroyos to overflowing. The soil became slippery and sticky, and the whole surface of the ground was covered with mud. In some places, large streams pouring down the sides of the mountains. The Wading Wading settled upon bushes and were so soaked that they were unable to fly. I urged my horse forward, fearing lest the fire should have risen rapidly, but when I saw that they could not, the water had not risen perceptibly. I soon became wet to the skin, my boots and saddle pockets filled with water and my horse looking like a drowned rat. The water seemed very cold, and my teeth chattered horribly. The sun shone out again just as I reached the Indian farms south of the Gila, and the Indian themselves were a poor, bedraggled set. Their mud huts were filled with children and squaws. Some half dozen boys, as naked as the day they were born, were built at a distance from the village with bows and arrows, and had evidently enjoyed the storm. They were ~~some~~ <sup>and long hair</sup> straight little fellows, with coal-black, lustreous eyes, and wild as they could be.

My Wading Wading, and doubtless Wading Wading, seemed to kill them with amazement. They looked at me as if I were some sort of a god, and were in high glee after their shower-bath that added to their as much as it detracted from my appearance.

The Indians had a large tract of land well fenced with mesquite shrubs and cottonwood poles and under their own cultivation. They raise barley, corn, potatoes, alfalfa, melons, etc., and are a very thrifty people. The Pimas have long been semi-civilized.

Our camp north of the Gila was as much as a wet potato-field, and filled with Pima Indians. The young men went about in breeches, their arms and legs were round, tanned, and well shaped, and some had quite good-looking faces, with long black hair, neatly "banged" in front. They wore more brightly colored gilettoes, and ~~the~~ <sup>afterwards Mrs. Wm. H. Smith</sup> <sup>in our camp</sup> <sup>the</sup> <sup>check</sup> <sup>of</sup> <sup>a</sup> <sup>young</sup> <sup>lady</sup> <sup>(Miss</sup> <sup>Forest</sup> <sup>)</sup> <sup>in</sup> <sup>our</sup> <sup>camp</sup>. One girl was very desirous to paint the cheeks of a young lady (Miss Forest) in our camp.

Most of the birds which I had shot were spoiled by wetting, so I threw all away save a young Shrike, a Gila Woodpecker and the Red-winged Blackbird, which latter I dried and skinned before returning. Along the ditches and fences in the Indian settlements were many Warblers, Sparrows, Towhees, etc., and the Great Blue and Snowy Herons were seen north of the Gila.

Some young men of the Pimas came into my tent and watched me skin specimens. One spoke English well and named some of them as follows:  
 "Cukua" = <sup>Prairie Fox</sup> <sup>(Vulpes velox)</sup>, a young one.  
 "Sarsha" = Red-winged Blackbird (Agelaius phoeniceus).  
 "Haguewick" = Gila Woodpecker (Geothlypis trichas), the growth of arborescent cacti with enormous drooping clusters of fruitage were the resort of families of Cactus tricus.

Some of these cacti, which are most abundant in  
 Lower Sonoran, were twelve feet high. The  
 rats or other animals build mounds and enrich  
 certain areas with the deciduous joints. They are  
 an admirable protection for the nests which the  
 Thrashers & Wrens habitually build in them; but I have  
 noticed that large lizards often climb them.

May 13<sup>th</sup>.

Marched 14 miles to Phoenix, Arizona. Early in the  
 morning, I hunted down the Gila River a mile or two.  
 Dozens of Cotton-tail Rabbits were the only mammals  
 seen there; but the tracks and signs of the Black-  
 footed Raccoon and Beaver were found on the Gila  
 and Salt Rivers. Numbers of Song Sparrows, Blue  
 Grosbeaks, Long-tailed Chats, Red-bellied Thrashers,  
 Black-capped Gnatcatchers, Yellow-headed Vireos, Lucy's  
 Warblers, Macgillivray's W., Western Yellow-throats, Sym-  
 phonious Yellowbirds, Least Vireos, House Finches, Green-backed Goldfinches,  
 Intermediate White-crowned Sparrows, Lazuli Bunting (one),  
 Dwarf Cowbirds, Red-and-buff-shouldered Blackbirds, Western  
 Meadow Larks, Hooded and Bullock's Orioles, Western  
 Kingbirds, Olive-sided Flycatchers, Western Woodpeckers,  
 Little Flycatcher, Vermilion Flycatcher, Black-chinned  
 Hummers, and Gambel's Quails were seen in the dense  
 underbrush of arrowwood, willows and grape-vine,  
 beside the Gila, and in the cottonwoods along  
 the acequias in the <sup>Indian</sup> gardens and grain fields.  
 Some Ravens upon the sand were so tame that I  
 could ride within a dozen steps of them.

Killdeer, Spotted Sandpipers and Green Herons  
 were feeding along the Gila; and a flock of  
 half a dozen or more Glossy Ibis flew down  
 the stream in wedge form. After shooting a mess  
 of Gambel's Quail for our supper, I left the Gila and  
 Indian settlement, and rode around the point of a

mountain, gradually ascending, the only trees  
 consisting of Green-barked acacias, Giant Cacti,  
 and Mesquites, in which latter a few Black  
 Crested Flycatchers were breeding. We found these  
 birds in great numbers from the Gila to Pinal,  
 marching towards Texas. They (*Phainopepla nitens*) were  
 much less abundant when we returned over ~~the~~  
<sup>the same</sup> part of the route, but were very common in the  
 elevated country <sup>traversed</sup> after leaving Phoenix, where none  
 were seen when we passed over the same country  
 earlier in the season.

After rounding the point of the mountain  
 we found groves of tall acacias and forests  
 of Giant Cacti in which were hundreds of White-  
 winged Doves, Malheur's Flickers and <sup>the</sup> Woodpeckers.  
 The Doves filled the air with their mournful  
 cooing, and were constantly in view flying strongly  
 from point to point, sitting in pairs or small flocks  
 upon the green-barked acacias or singly upon  
 giant sycamores, or on the ground. They were  
 probably breeding, but a hasty examination of  
 the shrubbery and other acacias proved fruitless.  
 The trail next passed between two mountains the  
 one on the left being a foot-ridge of the main moun-  
 tain on our right. Here I was passed by the  
 Phoenix and Maricopa stage, containing some well-dressed  
 passengers, who eyed my well-worn clothing and  
 somewhat miscellaneous horse-equipment <sup>meagre</sup> and baggage  
 with contemptuous amusement. I here noted that the  
 sycamores were of somewhat larger size and more branched  
 than those seen between Mountain Spring and  
 this place. I think that one of them would measure  
 forty to fifty feet in height, but this may be an over-  
 estimate. One of its branches would exceed the average  
 size of those growing upon the hills about Bumblebee  
 and on New River.



The level plain stretching from the foothills was  
 very ~~open~~. Tall round-jointed (*Cylindropuntia*) *Opuntia*  
*cactus* were common and Bendires and Palmer's  
 Thrashers were rather numerous. After a ride  
 that was both wearisome and hot I reached the cotton-  
 wood of Salt River, which afforded grateful shade  
 although the reflected heat from the surrounding  
 was intolerable. In attempting to follow a  
 St. Lucas Cardinal, my horse mired in a quagmire.  
 After a long search on foot I secured the specimen  
 a magnificent adult male, and discovered the  
 nest of the White-winged Dove (*Melospiza leucotis*)  
 and secured the single egg which it contained, along  
 with the female parent. Abert's Towhees were  
 also breeding abundantly. A clutch of four eggs  
 was taken from the willow thickets bordering the  
 Gila, in the morning. Road Runners were common

here. Several were seen on the River-flat and  
 in the gardens of Mexicans. I saw a specimen  
 of the Sealed Dove (*Scardafella inca*) in front of a  
 Mexican's dwelling, but did not like to shoot it there,  
 much as I coveted the specimen. The Green Heron  
 (*Butorides virescens*) <sup>anthonyi mearns</sup> was the only <sup>water</sup> bird of interest seen  
 along the Salt River. There were also a few Killdeer  
 and Spotted Sandpipers. I found our camp pitched  
 south of town upon the site of a small-pox cemetery  
 in which many recent interments had been made.

A clutch of Abert's Towhees' and White-winged  
 Dove's eggs were blown and packed; and then I  
 skinned of some Gila Woodpeckers, the St. Lucas  
 Cardinal, White-winged Dove + Pileolated Warblers.

Captain Baldwin and I munched bread and  
 milk during the latter part of the evening, and  
 then retired early, with thoughts of successful  
 collecting on the morrow, to be fully realized.

May 14<sup>th</sup>

Marched 14 miles, to Desert Station H. T.

A wounded man delayed my start in the morning.  
 A Sealed Dove (*Scardafella inca*) was shot on the edge  
 of the acacia beside the road in the town of Phoenix.  
 While I was wrapping it up, the Column passed by. I then  
 concluded to visit the suburbs of Phoenix on the west  
 and allow the troops to pass some time. The cottonwoods  
 were filled with singing birds. Groves of mesquite  
 were filled with song and flitting birds. An other Sealed  
 Dove was taken, and in an orchard-like field of  
 mesquites, where the ground was covered with ~~grass~~  
 grass, I found the Ground Dove (*Chamapelia passerina*),  
 and secured three specimens. Its note is a low "coo".  
 They live in the branches occasionally descending to the  
 ground, but not habitually as the Sealed Doves do.  
 Several newly-built nests of yellow grass stems and  
 fine weeds were placed on horizontal branches of  
 mesquite; but none contained eggs.

These mesquite "orchards" were filled with birds;  
 but, as my time was short, I shot no more of them.  
 Returning to the main road I found dozens at the  
 long-tailed Sealed Dove in it and along the acacias  
 bordering it. Some sat in cottonwoods and uttered  
 a double cooing note of doleful sound. I shot four  
 more of them, and hunted the cottonwood bushes  
 for their nests and those of the hundreds of Red-  
 winged Blackbirds, whose notes resounded on every  
 hand, but found only nests of Abert's Towhee and  
 took several sets of their eggs. I might easily have  
 taken more specimens of Sealed Doves, had I not  
 already as many as I could skin during the  
 evening. Neither this species nor the Ground Dove  
 were found elsewhere on the trip. The White-winged  
 and Mourning Doves were also very abundant.  
 Phoenix is a city of Doves, all of the Arizona

Species, of four different genera, breed there in abundance. The large Band-tailed Pigeon is the only other bird of the family found in Arizona, and it is a bird of the timbered mountain regions.

On a fence near town was nailed an enormous Gila Monster (*Heloderma suspectum*).

When out upon the desert once more, amid the cactus, sotmaras, greasewood and mesquite a pair of Le Conte's Thrashers (*Harporhynchus redivivus lecontei*) were shot, and the remaining three species of Arizona Thrashers were observed. Palmer's was the most abundant. Several families of Young Malherbe's Flickers (*Colaptes chrysoides*) were seen on wing, and a specimen secured.

A Hot Yuma Spermophile (*Spermophilus tereticaudus*) was seen in the top of a mesquite. I crept to the bottom of the tree and the thing was so paralyzed with terror that I easily caught it in my hand, and carried it safely to Verde, where it finally died and was preserved. It drank eagerly although inhabiting a region where water is seldom known. It ate corn and mesquite beans with avidity and was an agreeable pet.

The usual desert birds and animals were seen. Lizards were much more plentiful than when we passed over the ground before.

May 15<sup>th</sup>

Marched 22 miles to Hall's Ranch on New River, A.T.

When we started out from camp, I followed a wide arroyo with dry sandy bed, bordered with luxuriant shrubbery, in which were found Mockingbirds, Red-winged Thrashers, Black Crested Flycatchers, Black-capped Gnatcatchers, Yellow-headed Vireo, Pileolated Warblers, Black-throated Sparrows, Cañon Towhees, Abert's Towhee, Lark Buntings, Dwarf Cowbirds, Mourning Doves, White-winged Doves, and Gambel's Quail.

The last named is very abundant in this region. Hundreds of large flocks were seen. The Desert Hare and Northern Jackass Hare were abundant, and many were shot by the escurment.

The Yuma Spermophiles were exceedingly abundant; but I took no pains to shoot any. Harris's Chipmunk was seen in the border of the foothills; about Hall's ranch on New River. The Spermophiles were found to within a mile of Hall's ranch.

Many Road-runners were seen, but no nests. I secured three specimens of young Malherbe's Flicker, and saw several families. Palmer's Thrashers were plentiful. I skinned two males in worn plumage; also a Cañon Towhee, White-winged Dove, and a Black-capped Gnatcatcher taken near Hall's ranch with its newly-finished nest. The most abundant cacti were the Sonoran (*Cereus giganteus*) and the white Opuntia (*Cylindropuntia Bigelovii*), in which latter I took a set of 3 eggs of *Harporhynchus palmeri*. The Yuma Spermophiles were most plentiful in the wide belt of greasewood between Desert Well and New River. Cactus Wrens, Shrikes, Western Lark Finches, Brewer's Sparrows, Ravens, Ash-throated and Say's Flycatchers, Black-chinned Hummingbirds, Texas Night Hawks, Texas Scops Owls, Gila Woodpeckers, Sparrow Hawks, Red-tails, and White-winged Doves were seen at various places.

The great abundance of the Mourning Dove was remarked. On the bank of New River were the beautiful Louisiana Tanagers, Virginian Flycatchers, Rock Wrens, House Finches, Green-backed Goldfinches, Black Chivres, White-winged Doves and Killdeer.

Turkey Buzzards were seen throughout the march. New River was the first stream seen since we crossed Salt River. It was much lower than before, full of little fishes. Mr. Lang gave me a Gila Monster that he killed on the day's march. I presented it to Buzzard the Veterinary Surgeon.





were quite numerous. Yellow-headed Tits, Cactus, and Rock Wrens, Pileolated and Summer Tanager, Macgillivray and Lesser Wrens, Long-tailed Chats, Least Vireos, White-rumped Shrikes, Violet-green, and Rough-winged Swallows, Western Tanagers, House Finches, Rose-backed Goldfinches, Western Chipping Sparrow, Brewers, Black-throated, and Song Sparrows, Canon Towhees, Green-tailed Towhees, Abert's Towhees, Saint Lucas Cardinals, Dwarf Cowbirds, Hooded and Bullocks Orioles, Ravens, Western and Cassin's Kingbirds, Ash-throated Flycatcher, Jays, and Black Pewees, Vermilion Flycatcher, Black-chinned and Costa's Hummingbirds, Texan Nighthawk and Screechers, Gila Woodpeckers, Malherbes Flickers, Road-runners, Sparrow Hawks, Red-tail and Zone-tailed Hawks, Turkey Buzzards, Mourning, and White-winged Doves, Gambel's Quails, Mockingbirds, West Blue Herons, and Killdeer were the birds noted. I spent the balance of the afternoon and the evening in "blowing" eggs, and skimming my Thomomys phillipsi and merriami means. Crotophaga sulcirostris and some half dozen birds, most of them parents of set of eggs taken.

May 17<sup>th</sup>.

Marched 12 miles to Bumble Bee, Arizona.

The Cañon of the Agua Fria extending southward behind Swilling's Rancho is one of the prettiest places in all Arizona. I followed it down about two miles. The stream here is quite large, now flowing over an even bed of glittering sand for a mile, occasionally dividing to join lower down, enclosing in the loop a grove of tall cottonwoods, <sup>edged</sup> fringed with a growth of smaller willows and fringed with arrowwood and vines. The banks are rocky covered with Sotumaras, Echinocacti and Opuntias. Beautiful flowers grow beneath the cottonwoods, which here form the handsomest groves that I have yet seen in Arizona. In the early morning

I visited the Sybran dell and was unable to tear myself away from its attractions until the morning was far spent, nor was the time idly spent. I found a new Thrush (Hypocichla ustulata) which was new to me and has only twice been detected within this Territory and secured a specimen. A mile below Sistring's the stream becomes a braiding cataract, rushing over a rocky <sup>bed</sup> canon and disporting itself in a manner almost unique in Arizona waters. Here, in a branch of the stream purling over a bed of large pebbles, shaded by willows that meet overhead were many Tawny Chickadees hopping over the stones with the ease of Squirrels, close beside the falls of the main stream.

A gorgeous Cardinal Grosbeak was seen near by, and its nest discovered after a long search and its partner shot to death and carried off along with her nest and three eggs. The male was too shy to be taken.

A female Zone-tailed Hawk (Buteo abbreviatus) was shot as she flew screaming at me, and the nest was soon found in a cottonwood near by. The parent flew away when I got close up to the tree and shouted, and flew away. Although seen soaring about for some time it did not return although I spent several hours in the vicinity did not return. I climbed with vast exertion to the nest which contained two eggs, which together with the nest are described on pp. 38 to 41. These eggs are not absolutely free from suspicion of being those of Urubitinga anthracina, as the parent seen to leave the nest was not shot; but it certainly was a black hawk having a white-banded tail. The eggs are much larger and differently marked and colored from that taken on New River yesterday. The bird shot was certainly the Buteo. Its stomach contained tree toads and a frog.



White-winged Doves were numerous in this place. They make a clapping and rushing noise in flight. The notes are "Cuck-oo, Cuck oo" (four notes, or two 2-syllabic notes, given with force and mournful cadence.) Fond of drinking beside streams, the curved wing-bar and white tip of tail are conspicuous in flight. Costa's Hummingbirds (*Calyptra costae*) were exceedingly abundant. In the creek bottoms where grow the desert willows, now in flower and preferred by them to any others, dozens might be seen at once, the male fighting furiously with each, sometimes ascending to such a height as to disappear from view. They also frequented the mesquites, now in flower upon the hillsides. I searched for their nest without success, although they were certainly breeding, as indicated by the battles of the males and the pugnacious conduct of the females. Several of which buzzed angrily about my face, and one attacked a flying, ~~vampire~~ Killdeer, and drove the astonished Plover to the ground and silenced its vociferous cries, which seemed to have excited her in at the beginning.

*Chonopepla nitens*. - Families of young are already upon wing with their parents beside the Agua Fria.

*Stragalinus psaltria*. - A Green-backed Goldfinch shot at Swilling, had a few black feathers in its molt.

Below the falls near Swilling the cañon becomes narrower, and willows succeed the cottonwoods in the main, and there small birds were very abundant. Yellow-breasted Cates and Western Yellow-throats are characteristic species there. The latter were singing exquisitely, some mounting to the very summit of the willows.

Fishes, and Frogs were abundant in the Agua Fria. After leaving it, Palmer's Thrasher was traced all the way to Black Cañon, and birds within sight of Bumble Bee, as do the Cactus Wrens. (Yellow's White Cactus (*Opuntia* [*Cylindropuntia*] *Begelovii*) grows

clear through Black Cañon. A nest of *Sceloporus frontalis* (House Lizard) was built in one of them. It was made of a fine bright red flowering plant, and very handsome. Cactus Wrens were also found breeding nearly to the top of the cañon. In Black Cañon the large Rocky Mountain Spermophytes were quite numerous. In the stream were seen tracks of the Mountain Lion (*Linus concolor*), and their plaintive startling cries were heard at night in our camp.

Near the top of the cañon, in a palo verde or green-barked acacia, a White-winged Dove was sitting upon her nest close beside the stage-road, where I nearly succeeded in taking her off of the nest with my hand. The eggs and parent were taken. Gila Woodpeckers were found nearly to the top of the cañon. Gambel's Quail was seen leading brood of little bits of young ones up a nearly perpendicular precipice in the cañon.

May 18<sup>th</sup>.

Marched 16 miles, to Antelope Station, A. T. Along the dry bed of the creek that flows through Black Cañon were a number of Palmer's Thrashers here seen for the last time. Red-vented Thrashers were also seen there. White-winged Doves were also last seen before we were out of sight of the Giant Cacti, when ascending the mountains; and a young Malherbes Flicker was shot in the last solvaras, that was bred in this vicinity. A couple of nests of the Mockingbird were found, and one of the Giant Cactus Wren (*Campylorhynchus brunneicapillus*) before we left the valley; the latter containing five fresh eggs. No Gila Woodpeckers were seen before or after leaving the Black Cañon. Before we had ascended far we reached the line of oak shrubbery & found some scattered cedars. Simultaneously found the Woodhouse Jay and the nest of the first pair seen, containing four eggs, in an oak thicket.

A Coyote, some Mule Deer, Harris's Chipmunk, Rocky Mountain Pine-tailed Spermophiles, Wood Rat Desert Hare, Northern Jackass Hare, & Southern Pocket Gopher were the mammals noted.

We left the Sotumaras (*Cercus giganteus*) behind when we began the ascent of the mountain; as noted before I shot a Malherber's Flicker of the year in the last of them and found the nest of the Cactus Wren in the same locality. I traced Palmer's Thrasher so far and no farther; but *Campylorhynchus* *gambeli* was found as far as the summit, before descending to Antelope. Malherber's Flicker turned up again at Big Bug Creek, where there are no Sotumaras or other arborescent cactuses. No Lila Woodpeckers were seen to-day, or subsequently.

A nest of *Zenaidura macroura* was taken upon a shelf of trap rock in a cliff—the first I ever saw in such a situation.



Embryo of Woodhouse Sparrow.

May 19th

Marched 26 miles to Hance's Rancho, on the Siemga. After riding a few miles we came to the green cottonwoods and other trees of Big Bug Creek, where I left Daisy and followed the stream about a mile. It is a beautiful mountain brook, bordered by cottonwoods, willows,

Walnut, Ash and grape-vines, with a large species of <sup>cherryberry</sup> ~~leaves~~, in which I killed a young Malherber's Flicker, from a family of young of the year with their parents, the last seen on the trip. There were a number of Killdeer along the stream in a meadowy portion, and Rough-winged Swallows were building in the banks. I took eggs of the Least Vireo,

Mourning Dove and a set of 3 eggs of *Harporhynchus crissalis* which was built in an open situation suspended in a grape-vine. All of these eggs were broken later in the day together with other more valuable ones. A pair of Saint Lucas Cardinals were found beside the Creek, and both were seen as, and also their nest containing one egg, which, fortunately, was not broken when the nest were destroyed. Lewis's Woodpeckers were chipping in the cottonwoods and Lucy's Warblers were singing their lively song.

The Pine-tailed Squirrel (*Spermophilus grammurus*) is abundant. One ran up the bank towards me and stopped when it saw me, paralyzed with fear. My Horse had ran off and left me when I reached the road, and I had some trouble in finding her.

The nest of a Chaparral Cock (*Geococcyx californianus*) was found in an isolated scrub oak thicket on a sloping hillside. It contained 5 fresh eggs, some of which were afterward broken when my horse ran away.

Lewis's Woodpeckers were again found among the cottonwoods of the Agua Fria, on the bank of which I shot a Road-runner and had an exciting chase before I caught it. Taking a wrong fork of the road, I again came to the Agua Fria, and met some pleasant people at a rancho, where I rested and talked for half an hour, and then pursued my way.

Another nest of *Harporhynchus crissalis* was taken in a scrub oak; but like the first set they were all afterwards broken when my mare ran away. I "took across" a wide grassy slope to the Ash Creek at a narrow canon, which I had to follow for some distance before I could get my horse down into the bed of the stream. ~~In the~~ The only thing of interest found in this open place was a "nest" or at least two eggs in a hollow scooped out on the bare ground.



of the Mourning Dove (*Zenaidura carolinensis*) from the parent fluttered when my horse was exactly over it, giving both "Daisy" and myself a start.

The banks of Ash Creek were at first a tangle of scrub oak and rocky bluffs, in which were plenty of "Rock Squirrels" (*Spermophilus grammurus*) and Gila Chipmunks (*Tamias amoenus dorsalis*). Then a fine grove of cottonwoods was reached, and in one enormous tree was the huge nest of the Western Red-tail (*Buteo borealis calurus*). I had a hard climb for it, but reached the nest and secured the two fresh eggs, which were larger and more handsomely blotched than any others that I have seen; but they were crushed before I wrote any description and took any measurements. Another nest was soon found in another large cottonwood. The parent sat upon it. I shot her after dismounting, and when I did so stampeded a drove of horses behind some willows close-by, and my "Daisy" went with them. It was very hot, and I was fatigued from much walking, but was obliged to keep in sight of my brilliant mare, who kicked up her heels like a kitten, after her 700-mile trip and out ran all of the wild horses. After two or three hours of hard walking and much running I at last corralled them in a narrow cañon, ran my mare up to the end and then captured her, and found only a half dozen of the eggs which I had taken whole and several valuable birds ruined by the broken eggs in the pockets of my saddle, in which I had carried eggs safely through the entire trip. The nest was again visited and a couple of half-grown young Red-tails taken, one of which I skinned and preserved. I did not reach camp until dark, much disgusted with "Daisy's" performance that delayed me so long and smashed my best eggs.

The Mammals seen not already mentioned were the Mule Deer, Common Skunk (*Mephitis mephitis*), Black-footed Raccoon (tracks of), both Hares (*Lepus sylvaticus arizonae* et *capillus texianus*), Long-eared Bat, Harris's Chipmunk, Wood Rat and Southern Pocket Gopher, and Coyote.

May 20th

Marched 11 miles to Fort Verde, Arizona. I arose early, breakfasted hastily, and then galloped "Daisy" to the head of Copper Canyon, near which I broke. I saw the only Black-chinned Sparrow (*Spizella atrogularis*) seen on the trip. Black-headed Grosbeaks were abundant, as they were in the scrub oak districts of yesterday's march from Antelope. Lead-colored Tits, Leostic's Hummingbirds and Spurred Towhees were seen the two last days; and it is to be remarked that the last was only seen on the two first and last days of this trip. The lead-colored Tits were only found on the first day and last two days of the trip. It breeds on Big Bug Creek; for I saw a very noisy family of young ones being led by their parents yesterday.

I did not load my cartridges for to-day's shooting, as I was anxious to get in to the Post as soon as possible and see my family after two months absence. So I only stopped long enough in the Cañon to pluck a big bouquet of wild flowers for Mrs. Mearns - Indian pinks, yellow leucumbines, pale purple locusts and large peas - and galloped into the Post before nine o'clock on my white mare "Daisy" who carried me 912 miles to Denning and back with never a limp or sore back; but we were both glad to get in. The Post ambulance had been sent out for Mrs. Ayres whom I found at our house on my arrival, and Captain Baldwin soon joined me, with Lieut. Smith [killed at battle of Santiago, Cuba, 1898.]

My collections were found to be in excellent condition. Not even an egg was broken on the entire trip, and nothing was missing.

The collections consisted of

29 Mammals,	1 Box Tortoise
236 Birds	2 Gila Monsters
186 Birds' eggs	Horned Lizards
9 Nests	1 Lizard.
2 Serpents	

All of the above were dry preparations, there being no alcohol, nor means of transportation for alcoholics.

A report upon the Mammals and Birds was sent to the Surgeon General, U. S. Army, through the Medical Director of the Department of Arizona, and deposited in the library of the Army Medical Museum.

All official communications to this Office should be addressed "To the Surgeon General, U. S. Army, Washington, D. C."

WAR DEPARTMENT,  
SURGEON GENERAL'S OFFICE,  
RECORD AND PENSION DIVISION,

Washington, D. C., July 16<sup>th</sup>, 1885

Assistant Surgeon E. N. McCarms.

United States Army.

Fort Verde, A. T.

Sir:

The Surgeon General directs me to inform you of the receipt of your preliminary report upon a part of the vertebrate animals observed by you while in the field from March to May 1885. This report has been referred to the Curator of the Army Medical Museum from whom you will receive further acknowledgement and advice.

Very Respectfully,

Your Obidient Servant.

Benjamin L. Pope

Assistant Surgeon, U. S. Army.



Army Medical Museum and Library, S. G. Office,

509 to 515 TENTH STREET, N. W.,

Washington D. C., July 17<sup>th</sup>, 1885

Dr. Edgar A. Mearns  
Assistant Surgeon U. S. Army.

Dear Sir:

Your communication of June 29, 1885, transmitting to the Surgeon General a preliminary report on the zoology of parts of Arizona and New Mexico, has been forwarded to this Division. I have examined it with interest and pleasure, and have no doubt the complete report will be a valuable addition to our information with regard to the natural history of these localities.

I note that you state that the collections are intended to be presented to the American Museum of Natural History. In view of the fact that we are endeavoring to make in this Museum a complete collection of specimens in comparative Anatomy to

over

illustrate the development and morphology of man, and of the fact that all specimens of comparative anatomy and zoology are of value to this Museum, either to be placed in it directly or to be used as a means of exchange to obtain specimens bearing more directly on its special purposes, it is hoped that medical officers of the army in making collections will give this Museum the first choice of specimens which they may collect.

We desire to obtain a series of preparations which shall illustrate, not merely the skeleton, but also the development and evolution of various organs, and soft parts of the animal body, and, for this purpose, specimens preserved in alcohol are essential. As an indication of what is wanted, I enclose herewith a memorandum of some things which are specially desired, and which I hope you may, in part, at least, find it possible to obtain for us.

Hoping to hear from you on this subject,  
I remain,

Yours very sincerely

John S Billings.

Durgeon W Army

Curator Army Medical Museum.

<u>Felis concolor</u>	Head, in spirit, or any of the viscera. Skeleton of young individuals.
<u>Taxidea americana</u>	Adult skeleton; also skeleton of young preserved in spirit - Viscera.
<u>Castor fiber</u>	Skeletons of young and adult; also viscera, brain, etc.
<u>Antilocapra americana</u>	Skeleton of young in spirit. Head containing brain, in spirit.
<u>Polyborus</u>	Entire in spirit.
<u>Speotyto</u>	Entire.
<u>Circus hudsonicus</u>	Entire
<u>Glaucidium</u>	Entire
<u>Buteo borealis</u>	Entire.
<u>Aquila</u>	or any other Raptorial species, Entire.

Those preserved in alcohol should be carefully packed, to prevent breakage. The alcohol should not be of less than 70% strength.



Notes on a Trip from Fort Verde, Arizona,  
to Flagstaff, Arizona, <sup>and back</sup>, made between June  
18<sup>th</sup> and 22<sup>nd</sup>, 1886.

This trip was made for the purpose of meeting  
my mother, who was coming from the East,  
and conveying her to Fort Verde.

The Chief Quartermaster sent me an  
ambulance and excellent four-mule team  
from Whipple Barracks, and, as the team  
reached Verde early on the morning of June 18<sup>th</sup>,  
I concluded to move out as far as Beaver Head  
Station, now deserted, but formerly a station on  
the Star Route stage line from Prescott, Arizona,  
to Santa Fe, New Mexico, that evening.

Mr. Danil Robinson politely volunteered to  
accompany me on the trip for the pleasure  
of the drive. We found plenty of water in Beaver  
Head Creek a little way below the point at which  
the road crosses it, but the stream had sunk above.  
We encamped at dark beside the well at the old  
Station, and, after baking some bread in the Dutch  
oven and cooking a meal, retired. Mockingbirds,  
chats, Great Horned Owls were heard in the evening;  
also one or two Poor-Wills.

At daylight, a couple of Skunks (*Conepatus*  
*mapuritus*) were seen running about our camp  
taking an inventory of our effects. I ran  
barefooted after them with my shotgun, from  
which my thoughtful companion had with  
commendable prudence removed both the  
cartridges, and was, therefore, unable to shoot  
the Skunks although I snapped both hammers.

We broke camp at sunrise, after breakfasting  
on a young Jack Rabbit which I shot through  
the head with my Govt rifle. These Rabbits are

excellent eating notwithstanding the general opinion  
that they are filled with animal parasites and almost  
unfit for food.

We ascended a steep hill about a mile in  
length, and then began a gradual ascent through  
a fine growth of red cedars, which were studded  
with clumps of the parasitic mistletoe and inter-  
=spered with mescal or <sup>(Agave)</sup> aloes, now in bloom and  
some bear-grass and Spanish bayonet. Fleas of  
the species (*L. L. texianus et sylvaticus arizonae*) were  
exceedingly abundant. After riding about six  
miles, we walked a short distance to the edge of a  
deep cañon, which our road headed at Rattlesnake  
Tanks. The view of this cañon is fine; and our posi-  
=tion commanded that of the entrance to the Red  
Rock country in the direction of Oak Creek.

Gambel's Quails were abundant, and hundreds of  
young ones were seen with their parents. After  
about 25 young quails would be found accompanied  
by several females, and the cock birds also fre-  
=quently accompanied them. This strengthens the  
view that I have always entertained, viz.: that it  
is quite common for several Gambel Quails  
to nestle together, as the number of eggs (occasion-  
=ally nearly thirty) and different color phases  
exhibited in the same clutch illustrates.

The only birds of special interest were numbers  
of White-throated Swifts, which were evidently  
breeding in the adjacent cliffs of the adjacent  
cañon, and one fine Zoned-tailed Hawk,  
which flew within a few feet of me when  
standing at the edge of the cañon.

From Rattlesnake Tanks, where the Flagstaff  
road diverges from the old Star Route, we ascended  
rapidly over a rolling country, covered with grass,  
with patches of scrub-oak and mescal. The

The red cedars are left behind and are sparingly replaced by the rough-barked juniper. In the Cañon below Rattlesnake Tanks a couple of pines were first noted, and some piñon-pines were also seen. Mesquite was found nearly up to the pine timber-line on the mountain, which begins about six miles above Rattlesnake Tanks. Mockingbirds and White-throated Swifts were left behind at Pine Tanks, now dry, where the pine forest begins. At first the pines are rather small, and increased in size as we gradually ascended the mountain to Flagstaff. The rough-barked juniper penetrates the pine belt a few miles. Deciduous oaks begin with the pine timber, but are not very abundant anywhere nor of as large size as they are in the part of the Mogollon Mts. between Forts Verde and Apache.

The "Carpenter" Woodpecker of the Mexicans and Steller's Long-crested Jays appeared with the first pines.

After riding five miles from Pine Tanks, we came upon an open meadow, a couple of miles in extent, through which a small stream winds. These open spaces, richly carpeted with grass, are known as "parks". This one is owned by Mr. John Woods. A fine herd of cattle and horses was grazing upon it. The stream flows through a deep ravine from this meadow, and I wanted to explore its woody depths, where birds would doubtless have been abundant.

We next found water and a cabin at a place like that just described. This was Munde's ranch, where we camped for the night beneath some enormous pines. I took a walk of about four miles in search of Antelope, which Mr. Munde had told me frequently came to the edge of the park. I passed close to an Antelope that was lying down,

and had the mortification of having a Dr. Carrier, who lives at the ranch, shoot it close behind me. The Doctor had hunted all day, and seen a number of Deer and Antelope during the day. The Deer stay on the ridges; but the Antelope come down to the grassy mesas and parks, or live in the open pine woods. The Antelope in Arizona habitually inhabit the high wooded mountains, where they are not found elsewhere than here in the South.

In a ravine near Munde's place, a quantity of locust shrubs were in full flower, and fragrant. I shot an Abert's Pine Squirrel there with my rifle. I could have obtained some rare birds had I carried the shotgun instead of rifle. Robins, Long-crested Jays, Western Tanagers, Park Finches, Mountain Chickadees and Californian Woodpeckers were abundant and doubtless breeding there. Two Crows were seen, which were afterwards found in the same dry pine-tree when we returned two days later. One or two small chipmunks were seen which I could not identify, but were either *Tamias asiaticus dorsalis* or *T. a. quadrivittatus* (= *Eutamias cinereicollis* Allen).

I returned to camp fatigued; but, after resting a while, explored the cañon and stream coming through the park from a cañon above it having its source high up in the hills. Both here and at Woods's, we found numbers of Brewer's Blackbirds having young upon the wing. Some were barely able to fly, and had down tufts still adhering to the tips of the feathers. The young in the first plumage are colored like their mothers. I examined a dead one which I found, and intended to shoot a specimen in the first plumage for preservation but neglected to do so. I think they usually build their nests in pine-trees. The only nest I saw, was



placed in a aspen-tree six feet above the ground. It is composed of fine twigs, stems of plants and lining of rootlets. It contained four (4) eggs which contained small embryos. The suite of eggs was preserved, but the nest was accidentally left behind at Flagstaff.

The parks and vicinage of streams have large beds of iris or Flam-de-luce. In the little cañon through which the stream flows were found the only spruce trees seen on the trip. They were festooned with hanging usnea moss. The wild rose, iris, honeysuckle and white clover were growing plentifully.

I shot a Long-crested Jay in a pine-tree. Its plumage was very much worn and soiled with gum, its throat being nearly bare. Many birds were seen in the pine-tops and a beautiful Red-faced Warbler was flushed from its nest upon the side of the bank, close to the trunk of a large spruce. It alighted in the lowest branches of a small spruce, uttering a sharp, hard chip. The bird was so fearless and the place I was in so hard to get out of that I feared I could not secure the specimen without mutilating it. I fired a charge of 10's, my finest shot, aiming six inches to one side of the bird and did not hit it at all. Then it flew a little farther off and the same experiment was repeated with no better result. Then it flew to the lower limbs of a distant spruce and hopped nimbly about uttering its single note until shot. Its red face, black cap, gray back and white rump, suggested to my mind a miniature of the European Bullfinch (Pyrrhula europaea). After securing the old bird, which was a new species to my field experience, I began to search for its nest upon the ground. An old nest was discovered, after close search, and I was about to conclude that it

belonged to my bird and was not yet completed, when I saw a little opening among the <sup>stones</sup> rocks and pine needles, and, on parting some blooming honeysuckles and moss, I discovered the nest, as artfully concealed as it was deftly constructed and prudently located. In it were four (4) eggs which contained small embryos which were easily removed. The shells were thick and hard.

A small, chequered serpent was seen beside the stream, in a bush, that was new to me, but escaped before I could capture it. Here I first saw a tall plant resembling Veratrum viride, six feet high, which was afterwards seen occasionally everywhere there and at Flagstaff. After gathering a few new plants and pressing them, I returned to camp with a new bird and two new nests and eggs. In the twilight I shot a small Bat of a dark auburn color that was also new to me; but it was so badly mutilated that I was unable to preserve the specimen.

June 20<sup>th</sup>. — The drive to Flagstaff through the open parks and pine timber was delightful. We arose from a refreshing sleep well covered with blankets notwithstanding the intensely hot weather down below us in the Verde Valley, where the maximum temperature of the five days spent on this trip averaged 105° F. in the shade. Starting early we reached Flagstaff between ten and eleven o'clock in the morning. Songs of unfamiliar birds were heard as we rode along. Among the more conspicuous vocalists was the Plumbeous Vireo, of which species I obtained my first specimen. The gorgeous Violet-green Swallow <sup>(Tachycineta thalassina)</sup> was continually sailing about us; and one Purple Martin flew overhead about the top of a large pine. I first heard the song of the Heepatic Tanagers and in fact many other mountain birds, most of

which I was unable to identify while bowling swiftly along in our ambulance, only stopping occasionally to have a shot at some squirrel or bird.

I shot three female Say's Chipmunks (*Tamias lateralis*). None were seen until we were within a dozen miles of Flagstaff, where a number were seen sitting upon ~~logs~~ rocks or logs that had been felled for the saw-mill. They utter a high-pitched whistle which is ventriloquial and seems to come from the nearest tree-top when in reality the animal is at quite a distance and upon the ground. They are larger and less shy than Harris's Chipmunk. A fine Rocky Mountain Pine-tailed Spermophile was shot on a log near the road. It was suckling young as were all three Say's Chipmunks, which contained a quantity of milk in the mammae, which bore evidence of suckling.

Near the Hydraulic Works, in an open field near the pump, I shot a little Weasel whose audacious temerity was nothing short of marvellous. It came right up close to me. I had much difficulty in getting far enough away from it to shoot it without mutilation, which I succeeded finally in doing. This was *Intomus arizonensis* Mearns.

No Hares of any species were seen anywhere in the pine timber on the trip.

Soon after leaving Munds's place we saw the first Hepatic Tanagers (*Psanga hepatica*). Two pairs were courting and fighting. They chased one another about through the trees and once or twice settled upon the ground. This species appears to be partial to the oak timber in the pine woods.

The pines are of large size and harbored numbers of Pigmy and Slender-billed Nuthatches, Louisiana Tanagers, Desert House Wrens, Juncos, Lark Finches, Mexican Bluebirds, Robins, Violet-green

Swallows, Californian Woodpeckers, Sparrow Hawks, Plumbeous Vireos, Pine Finches, Long-crested Jays, Audubon's Warblers, etc. etc.

We pitched an A tent for mother in a grove of magnificent pines, where Plumbeous Vireos, Louisiana Tanagers, Robins, Arizona Chipping Sparrows, Arkansas Kingbirds (~~and~~ probably Cassins ~~etc.~~), Pine Finches, Audubon's Warblers, Jays, Woodpeckers, Nuthatches and many other birds were singing or uttering their usual notes. I heard what I think was a Brown Creeper but did not see it.

I spent most of the afternoon in calling about town and skinning squirrels. Purple Martins were numerous at Flagstaff. One was seen 15 miles south of Flagstaff, in the pine woods; but I shot none. I regretted having so short a time to spend at Flagstaff, as I would undoubtedly have found numbers of nests and eggs, besides birds and mammals new to me. Bats large and small were abundant in the evening.

Mother arrived on the train at ten o'clock, 3 hours behind time, and went at once to the tent to retire and slept soundly.

June 21<sup>st</sup>:— We were delayed at Flagstaff to have some work done on our ambulance. I went shooting for an hour. A pair of Robins had built a nest in a small pine, 20 feet high, and were waging war against an Abert's Pine Squirrel which I shot in a very large pine-tree. I first saw the Squirrel upon the ground. My attention was attracted by the cries of the Robins. The cry of this Squirrel is a squeal. Chipmunks were seen in a rocky cañon. They looked like var. dorsalis. I wounded two, both of which escaped into rocks. Doves were fairly common. Juncos, Jays, Bluebirds, La. Tanagers, Lark Finches, Mountain Chickadees, Brewer's Blackbirds, Robins, Cal. Woodpeckers, Nuthatches, Audubon's Warblers, <sup>Western</sup> King-



(Tachycineta Alpida Mearns)

Birds and Violet-green Swallows were the most abundant birds. A bird resembling Setophaga ruticilla was seen in the pine-tops, but was not identified positively. One Hepatic Tanager was shot. We left Flagstaff at eleven o'clock, a.m., and rode to Munds' rancho where we stopped for lunch. Before reaching that place an Antelope was seen near the road but trotted over a ridge before I could get at my rifle. I started to stalk him on foot, but could not get within 400 yards although he circled and zig-zagged around me for half an hour; so I did not hit at it at all.

Violet-green Swallows were very abundant. Although a few breed in the Verde Valley, their true home is undoubtedly in the pine forests of higher altitudes.

At Woods' rancho, we stopped an hour and watched the rodeo at the corral. Killdeer were found along the stream in the park, and were the only water birds seen on the trip. A small serpent was captured here.

We camped for the night at Pine Tanks, which were dry, but we had water for cooking and drinking in the canteens & the mules were watered at Woods'. We got to our camp at Pine Tanks at sunset.

June 22<sup>nd</sup>. — A pair of Hepatic Tanagers was shot at camp before we were ready to leave. Pine Tanks is on the edge of pine timber, and we were soon descending towards Rattlesnake Tanks.

Rabbits, Mockingbirds and White-throated Swifts were soon again seen, and after a time the rough-barked junipers gave place to red cedars with now and then oak shrubs and bear-grass with various other shrubs and occasional clumps of cactus (Platichnia & Mammillaria) and aloe.

At Rattlesnake Tanks, the curious batrachian

having external gills like the Menobranchus was found. They were only about three or four inches long, and were the same that I found in tanks on the Mogollon Mts. on the Apache road.

Upon the rocks beside the tanks were some superb conical bunches of Mammillaria cactuses. Passing down through the cedars we found Hares in great abundance and Spermophilus, Lila Chipmunks, Green Lizards (Crotaphytus collaris & ) were abundant, basking upon malpais rocks in the sunshine. Dan. shot two which were preserved in alcohol. Turkey Buzzards were numerous along the cliffs, as were Western Red-tail Hawks. Phainopepla were not seen until we reached Beaver Head. The usual valley birds were seen thence in to the Post, where we arrived at two o'clock P.M. We found a wooden box, filled with the rose-purple locust flowers and others at Pine Tanks, quite fresh when opened at home nine hours later.

List of Mammals seen.

Canis latrans. — Heard at all camps.

1. Urocyon cinereo-argentatus. — Tracks in the cañon near Munds' rancho.

2. Sciurus aberti. — Found throughout the pine forests. We shot specimens at Munds' and at Flagstaff.

3. Spermophilus grammurus grammurus. — One was shot as high up the mountain as Flagstaff.

4. Tamias lateralis. — Say's Chipmunk was only found in the vicinity of Flagstaff, where it was very abundant. Seen by us for the first time. We captured four specimens, all females.

5. Tamias asiaticus dorsalis. — Several were seen between Beaver Head and Rattlesnake Tanks. Some Chipmunks seen about Flagstaff appeared to belong to this race, but were not positively identified. [The latter were Tamias cinereicollis Allen ~~asiaticus quadrivittatus~~]

Eutamias amoenus Allen

6. Tamias resiliens quadrivittatus. - One that we saw running up a tall pine nearly to the top. looked to me like this subspecies.
7. Lepus sylvaticus arizonae. - Abundant throughout the belt of cedar timber, gradually disappearing thence through the sparser rough-barked junipers. We saw no Hares in pine timber; but there are probably a few in rocky ridges if not in the open pine forests.
8. Lepus texianus. - Habitat the same as above.
9. Antilocapra americana. - Only two, one male and one female, seen near Munn's ranch; said to be common.
10. Sciurus macrodon montanus. - Common on ridges and high ground. Scarce in the open woodland.
11. Mus musculus. - A House Mouse was found in Mr. Brannan's hay scales, when he was showing them to us, at Flagstaff.
12. Putorius arizonensis Mearns. - The Little Weasel shot at Stam jump near Flagstaff is the only weasel I ever saw or heard of in Arizona, aside from published records. It was a female suckling young. The anal gland contained a very permeating foetid liquid, which I was unable to get rid of for several days. The specimen was in excellent fur.
13. Thomomys talpoides umbrinus. - Its mounds were not noticed after we reached the pine woods.
14. Long-eared Bat. - Common.
15. Little Brown Bat. - Common.
16. Auburn-haired Bat. - One was shot at Munn's. It was badly mutilated and not preserved as I expected to be able to obtain a perfect specimen, but neglected to do so when returning.
17. Onychomys leucogaster. - Two on Beaver Head June 19.

Note. - Mr. "Bill" Munds is an old settler and owns a handsome herd of stock and a fine range. He told me that when he first came into Arizona, many years ago, he found the Indians making a "drive" for Elk (Ovis <sup>merrilli</sup> ~~canadensis~~) in the San Francisco Mts. There were plenty of Elk tracks and more Indians. He did not see any of either but there was abundant evidence that the drive was successful.

Dr. Brannan, of Flagstaff and his brother each have a specimen of the Mountain Sheep, obtained near Flagstaff. Mr. C. J. Brannan sent his mounted specimen to the Centennial exhibition at New Orleans, and had not received it back when I was there. The Dr. sent his specimen East to his mother. I have never yet seen an Arizona skin.

Birds: - The only birds of interest seen below the pine belt were a Zone-tailed Hawk (Buteo abbreviatus) and many White-throated Swifts (Micropus melanoleucus) seen in the Cañon below Rattlesnake Tanks, and the latter thence nearly to the pine timber at Pine Tanks.

The following is a complete list of all the birds seen and identified in the pine timber between Pine Tanks and Flagstaff; -

1. Egialitis roscifera. - A few on a small stream flowing through a park at Woods', at an elevation of nearly 7,000 feet.
2. Zenaidura macroura. - Sparsely scattered through the pine timber; most abundant at Flagstaff.
3. Falco sparverius. - Common in the pine woods, where there is an abundance of pine nestling sites.
4. Colaptes cafer. - Several were seen at Flagstaff and a few were scattered along the road all through the pine woods.



5. Chordeiles virginianus henryi. — This Nighthawk was abundant at Flagstaff, where I recognized it instantly by its harsh note, which is quite unlike that of C. accipitrinus texensis the only species I had found hitherto in Arizona. They might easily have been shot, but I had no opportunity.
6. Trochilus alexandri. — No other species was recognized; but I may have seen several others, as Hummers were frequently seen darting about in the pine forests.
7. Tyrannus <sup>doubtless as aff. with vociferans</sup> verticalis. — Common everywhere in the pine woods; the only one shot was this species, but I think some of those seen were T. vociferans.
8. Sayornis saya. — Occasional; a few about Flagstaff.
9. Contopus richardsonii. — Common.
10. Cyanocitta stelleri macrolopha. — Common throughout the pine timbered country. One nest found, at Flagstaff was just finished, probably for a second brood. It resembled a Blue Jay's (C. cristata) and was placed in the topmost fork of a pine 25 to 30 feet high.
11. Corvus carnivorus sinuatus. — Scarce.
12. Corvus americanus. — A few were seen. It probably breeds in pine-trees. A pair seen at Munns were in the same tree when we returned two days later, and perhaps had a nest near.
13. Sceloporphagus cyanocephalus. — Found, especially about cattle, throughout the pine timber. The young were on wing, although I found one nest in an aspen-tree, from which I took four nearly fresh eggs.
14. Spinus pinus. — Common near Flagstaff.
15. Chondestes grammacus strigatus. — Common all through the pine woods. Singing sweetly.
16. Spizella socialis arizonae. — Very common at Flagstaff.

17. Junco cinereus dorsalis. — Common. None were shot, but I think they were subspecies dorsalis as those found in the neighborhood of Baker's Butte a short time after were J. dorsalis. There may have been other species or races of Junco present.
18. Piranga ludoviciana. — Abundant, sweetly singing.
19. Piranga hepatica. — Not rare in the pine woods. Seems partial to the deciduous oaks found in the pine woods. The male sings a loud, remarkably sweet song, which I heard best at ~~our~~ sunrise in our last camp at Pine Tanks, where I secured a pair.
20. Progne subis. — One seen near Munns ranch. Common at Flagstaff.
21. Tachycineta thalassina. — The most characteristic species in the pines. This is Tachycineta lapida Mearns.
22. Vireo solitarius plumbeus. — Common; a sweet singer; breeds in tall pines.
23. Dendroica auduboni. — Common in the pine timber where they breed.
24. Sceloporus (?) sp. — ? — This bird was seen at Flagstaff in pines, but could not be identified.
25. Cardinalis rubrifrons. — The female whose nest I took at Munns's was the only one seen to be identified; but I probably saw others skipping in the pines at too great a height to be recognized.
26. Salpinctes obsoletus. — A few at Flagstaff.
27. Troglodytes aedon alleni. — Fore some miles before reaching Flagstaff the finest pines near the road have been felled and left upon the ground in preparation for the saw-mill. Among the branches of these prostrate giants of the forest, the little ~~House Wrens~~ Troglodytes were skipping merrily about. They were abundant. A specimen was secured on our return trip.
28. Sitta carolinensis aculeata. — Rather scarce.

29. Sitta pygmaea. — Rather abundant.  
 30. Parus gambeli. — Apparently rather scarce. A few were seen at Flagstaff & along the road.  
 31. Poliophtila caerulea. — Rather uncommon.  
 32. Merula migratoria propinqua. — Rather common in the pines, especially at Flagstaff, where they sang loud and sweet.  
 33. Sialia mexicana. — Abundant everywhere through the pine woods.

### List of Specimens Collected:

#### Mammals: —

- No. 420. Sciurus aberti. ♀ ad.  
 " 421 Sciurus aberti. ♂ juv.  
 " 422 Sciurus aberti. ♀ ad.  
 " 423 Spermophilus grammurus. ♀ ad.  
 " 424 Tamias lateralis. ♀ ad.  
 " 425 Tamias lateralis. ♀ ad.  
 " 426 Tamias lateralis. ♀ ad.  
 " 427 Tamias lateralis. ♀ ad.  
 " 428 Putorius <sup>arizonensis</sup> ~~fragilis~~ <sup>meanus</sup> ~~fragilis~~ ♀ ad. = P. arizonensis Meanus.

#### Birds: —

- No. 4903. Cardellinus rubrifrons. ♀ ad. with nest and 4 eggs.  
 " 4904. Tachycineta thalassina. — Lepida Meanus.  
 " 4905 Vireo solitarius plumbeus. ♂ ad.  
 " 4906 Piranga ludoviciana. ♂ ad.  
 " 4907 Cyanocitta stelleri macrolopha. ♂ ad.  
 " 4908 Piranga hepatica. ♀ ad.  
 " 4909 Troglodytes aedon alleni. ♂ ad.  
 " 4910 Piranga hepatica. ♂ ad.  
 " 4911 Piranga hepatica. ♀ ad.

#### Reptiles: —

- One Serpent (at Woods'n) preserved in alcohol.  
 2 Crotaphytus collaris. — Collared Lizards preserved in alcohol.  
Plants. — About 20 species were preserved.  
Eggs set of 4 of Sceloporus cyanocephalus.



88, 88, 89, 98, 103, 111, 114, 118, 127, 129, 134, 137, 140, 141, 149, 150,

154.

98, 100, 103, 118, 126, 127

Lepus callotis 16, 65, 66, 67, 68, 71, 75, 111, 114, 118,

Lepus texianus 16, 46, 48, 50, 52, 54, 60, 65, 66, 67, 68, 75, 77, 81, 84, 88, 88, 89, 98, 103, 111, 114, 118, 127, 129, 134, 137, 140, 141, 149, 150,

Erethizon dorsatus epixanthus

Castor fiber canadensis 122, 139 (letter),

Dipodomys phillipsi ordi 16, 122 (pile up, each joint), 129,

Thomomys talpoides umbrinus 77, 88, 88, 129, 134, 137, 150,

Sciurus hudsonius fremonti

Sciurus aberti 143, 147, 149, 154.

Sciurus arizonensis

Tamias asiaticus quadrivittatus 143, 147, <sup>150</sup>150,

Tamias dorsalis <sup>49</sup>48, 50, 50, 77, 136, 143, 149, 149,

Tamias harrisi 16, 48, 49, 52, 53, 54, 118, 127, 129, 134, 137,

Tamias lateralis 146, 149, 154.

Spermophilus grammurus 48, 50, 129, 133, 134, 135, 136, 146, 149, 149, 154.

Spermophilus tereticaudus 16, 52, 54, 62, 73, 75, 77, 87, 88, 92, 93, 94, 95, 98, 100, 103, 118, 126, 127,

Cynomys columbianus 16, 58, 60, 79, 80, 81, 93, 99, 100,

Mus decumanus

Mus musculus 150,

Dicotyles torquatus

Cervus canadensis 151,

Cariacus leucurus crooki et mexicanus

Cariacus macrotis montanus 48, 54, 77, 88, 89, 100, 134, 137, 150,

Antilocapra americana 48, 88, 89, 100, 112, 139 (letter), 142, 143, 148, 150,

Ovis montana 63, 151,

Canis familiaris (Indian Dog)

Long-eared Bat 137, 150,

Large Brown Bat

Little Brown Bat 150,

Red Bat, and all other spp. 50, 54, 77, 103, 145, 147, 150,



*Mammals 1, 138.*

Sorex

Moles (all spp.)

Felis concolor 16, 133, 139 (letter),

Lynx rufus maculatus

Lynx canadensis (or other species than the above)

Bassaris astuta

Canis lupus occidentalis

Canis latrans 48, 50, 54, 88, 118, 129, 134, 137, 149,

Vulpes velox 16, 69, 110, 118,

Urocyon cinereo-argentatus 149,

Gulo luscus

Putorius braziliensis frenatus 146, 150, 154

Mephitis mephitis 129, 137,

Mephitis interrupta

Onychomys leucogaster 140,

Taxidea americana berlandieri 77, 88, 89, 139 (letter),

Lutra canadensis

Procyon hernandezii 122, 137,

Ursus horribilis

Ursus americanus

Neotoma mexicana 77, 88, 88, 122, 129, 134, 137,

Hesperomys leucopus sonoriensis

Hesperomys leucopus eremicus

Hesperomys leucogaster torridus

Arvicola (riparia?)

Sigmodon hispidus arizonae

Fiber zibethicus

Lepus sylvaticus nuttalli

Lepus sylvaticus arizonae 16, 13, 46, 48, 50, 54, 60, 88, 91, 95, 100, 118, 122, 127, 129, 134, 137, 141, 149, 150,

